

LAS CAMAS SOLAR PROJECT

DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT

SCH: 2021080196

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Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
AAQA	Ambient Air Quality Analysis
AB	Assembly Bill
AC	alternating current
AMI	area median income
AMM	avoidance and minimization measures
anode	negative electrode
BAAH	breaker and a half
BESS	battery energy storage system
bgs	below ground surface
BMPs	best management practices
BMS	battery management system
BTUs	British thermal units
Building Permit	Merced County, Construction Permit
CAA	Clean Air Act
CAAA	Clean Air Act Amendments of 1990
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAISO	California Independent System Operator
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Safety and Health Program
CalEEMod	California Emissions Estimator Model
CALGreen	California Green Building Standards Code
CalRecycle	California Department of Resources, Recycling, and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
cathode	positive electrode
CCR	California Code of Regulations
CDE	California Department of Education
CDFW	California Department of Fish and Wildlife
Central Valley Water Board	Central Valley Regional Water Quality Control Board
CEQA	California Environmental Quality Act
CEQA Guide	Guide for Assessing and Mitigating Air Quality Impacts
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH ₄	methane

CHL	Californian Historical Landmarks
CHRIS	California Historical Resources Information System's
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
Community Plan	Villages of Laguna San Luis Community Plan
Community Plan EIR	Villages of Laguna San Luis Community Plan EIR
County	County of Merced
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CTCP	Construction Traffic Control Plan
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CVP	Central Valley Project
CWC	California Water Code
DC	direct current
DPM	diesel particulate matter
DTSC	Department of Toxic Substance Control
EDR	Environmental Data Resources
EFS	Environmental Field Specialist
EIR	Environmental Impact Report
EMF	electromagnetic field
EMFAC2021	Web-Based Mobile-Source Emission Factor Model
EMP	Emergency Management Plan
EO	Executive Order
EOC	Emergency Operation Center
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESA	Environmental Site Assessment
ESA	Endangered Species Act
FHSZ	Fire Hazard Severity Zones
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FRAP	Fire Resource Assessment Program
GC	General Commercial
General Plan	Merced County General Plan
General Plan EIR	2030 Merced County General Plan Update EIR
gen-tie line	generation tie line
GHG	greenhouse gas

GKR	giant kangaroo rat
GPA	General Plan Amendment
GSAs	Groundwater Sustainability Agencies
GSPs	Groundwater Sustainability Plans
GVWR	gross vehicle weight rating
GWP	global warming potential
H ₂ S	hydrogen sulfide
HAPs	hazardous air pollutants
HCD	Housing and Community Development
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbon
HMBP	Hazardous Materials Business Plan
HRA	health risk assessments
HVAC	heating, ventilation, and air-conditioning
Hz	hertz
I	Interstate
I-5	Interstate 5
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IGC	Inter-Governmental Coordination
IPCC	Intergovernmental Panel on Climate Change
IRP	Integrated Resource Plan
ITP	incidental take permit
Cal/OSHA	California Division of Occupational Safety and Health
KOPs	key observation viewpoints
kV	kilovolt
lb/day	pounds per day
LBUSD	Los Banos Unified School District
LDR	Low-Density Residential
LDT	light-duty truck
Li-ion	lithium ion
LOS	level of service
LRA	Local Responsibility Areas
MCAG	Merced County Association of Governments
MCC	Merced County Code
MCFD	Merced County Fire Department
MCSD	Merced County Sheriff's Department
MDR	Medium-Density Residential
MHz	megahertz
MJHMP	Multi-Jurisdictional Hazard Mitigation Plan

MLD	most likely descendant
MMTCO ₂ e	million metric tons of carbon dioxide equivalents
mpg	miles per gallon
Mph	miles per hour
MPO	metropolitan planning organization
MRZ	Mineral Resource Zone
MVCS	medium-voltage collection system
MVTs	medium-voltage transformers
MW	megawatt
N ₂ O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCDM	Northern & Central Delta-Mendota Region
NDC	Nationally Determined Contribution
NEIC	Northeast Information Center
NERC	North American Energy Reliability Corporation
NESC	National Electric Safety Code
NFPA	National Fire Protection Association
NHTSA	National Highway Traffic Safety Administration
NO	nitric oxide
NO ₂	nitrogen dioxide
NOP	notice of preparation
NO _x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OEHHA	Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PCBs	polychlorinated biphenyls
PCE	tetrachloroethylene
PCS	power conditioning station
PFC	perfluorocarbons
PG&E	Pacific Gas and Electric Company
PM	particulate matter
PM ₁₀	respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
PM _{2.5}	fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less
pph	persons per household

PPV	peak particle velocity
PRC	Public Resources Code
proposed project	Las Camas Solar Project
PV	photovoltaic
quad	quadrangle
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act of 1976
RDM	residual dry matter
RECs	recognized environmental conditions
RHNA	Regional Housing Needs Allocation
RHNA	Regional Housing Needs Assessment
ROG	reactive organic gases
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RTP/SCS	2022 Regional Transportation Plan/Sustainable Communities Strategy
RV	recreational vehicle
RWA	Regional Waste Authority
SAB	State Allocation Board
SAFE	Safer Affordable Fuel-Efficient
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SCIC	Suppression through Cooling, Isolation, and Containment
SCS	Sustainable Communities Strategy
SEIR	subsequent environmental impact report
Service	U.S. Fish and Wildlife Service
SF ₆	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLWD	San Luis Water District
SMARA	Surface Mining and Reclamation Act of 1975
SO ₂	sulfur dioxide
SOC	state of charge
SO _x	sulfur oxide
SPCC	Spill Prevention, Control, and Countermeasure
SR	State Route
SRA	State Responsibility Area
SUTs	step-up transformers
SWPPP	Stormwater Pollution Prevention Plan

SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TCE	trichloroethylene
TK	transitional kindergarten
UL	Underwriters Laboratory
Under2 MOU	Global Climate Leadership Memorandum of Understanding
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
V	volts
VdB	vibration decibels
Villages CP	Villages of Laguna San Luis Community Plan
VMT	vehicle miles traveled
VOC	volatile organic compound
WECC	Western Electricity Coordinating Council
WMP	Wildfire Mitigation Plan
WSA	water supply assessment

ES.1 Project Overview

ES.1.1 Summary Project Description

EDPR CA Solar Park III LLC (project applicant) proposes to develop, own, and operate a 200-megawatt (MW) alternating current (AC) ground-mounted solar photovoltaic (PV) power plant located on vacant lands in unincorporated Merced County, California. The applicant has filed applications for a Conditional Use Permit (CUP) (CUP Application No. 20-011), Merced County General Plan (General Plan) Amendment (General Plan Amendment Application No. 20-001), and Zone Change (Zone Change Application No. ZC 21-002) with Merced County to allow for the construction, operation, and maintenance of the proposed solar project, which entails the long-term generation of clean renewable energy from solar power. The energy generated by the solar project could be sold to public utilities, municipal utilities, or large private consumers of power. The power generated by the solar project would be interconnected to existing PG&E power grid infrastructure for delivery to the purchaser of the power.

The Las Camas Solar Project (project or proposed project) consists of the proposed Las Camas solar facility (solar project), located on roughly 1,741 acres of undeveloped, privately owned land (solar project site), and improvements to the Pacific Gas and Electric Company (PG&E) Los Banos Substation (PG&E substation improvements), located approximately 0.2 mile west of the solar project site. The project would also construct a 230-kilovolt generation tie line (gen-tie line) to connect the solar project to the PG&E substation. The areas comprising the solar project site, gen-tie line, and PG&E substation are collectively referred to as the “project site” in this SEIR. The solar project is anticipated to be operational in 2025 and expected to operate for 35 years.

The proposed project also includes two off-site components: establishment of a roughly 1,498-acre, off-site mitigation site (off-site mitigation site) as part of the solar project’s habitat mitigation proposal, and a General Plan amendment to redesignate roughly 202.8 acres immediately south of the solar project site from low-density residential to high-density/medium-density residential (off-site General Plan Amendment/Community Plan Amendment).

ES.1.2 Project Location

The 1,741-acre solar project site is located in western Merced County, approximately 3 miles southeast of the unincorporated community of Santa Nella, California, 6 miles west of the city of Los Banos, and approximately 30 miles southwest of the city of Merced (Figure 2-1), at the southwest corner of the intersection of State Route (SR) 33/SR 152 and Interstate 5 (Figure 2-2). The proposed 202.8-acre off-site residential redesignation area abuts the southern border of the solar project site boundary. The off-site mitigation site is approximately 5 miles south of the solar project site, immediately south of Los Banos Reservoir. The PG&E substation is located approximately 0.2 mile west of the solar project site. Figure 2-1 shows the project vicinity, the solar project site boundary, and the locations of the off-site mitigation site, off-site residential redesignation area, and the PG&E substation.

ES.1.3 Project Components

Proposed Solar Project

Site Components

The proposed solar project would develop 48.51 acres out of 1,741 acres, or approximately 2.8% of the total solar project site. The solar project onsite components would include access roads, solar PV panels, single-axis trackers, direct current (DC) to AC power collection wires and electrical inverters, lithium-ion batteries in either a DC-coupled battery energy storage system (BESS) system or an AC-coupled BESS system (referred to as the DC Option and the AC Option, respectively), battery enclosures, a solar project substation, a 230-kilovolt gen-tie line, and a supervisory control and data acquisition (SCADA) system. This SCADA system is used to remotely operate breakers within the substation, and is integral to the safe operation of the substation.

Permanent access to the solar project site would be provided via a new access point at Billy Wright Road where it abuts the eastern portion of the solar project site. This access point would be reached by taking SR 152 west out of Los Banos, and turning left onto Billy Wright Road, or by exiting Interstate 5 onto SR 152 and turning right onto Billy Wright Road. The access point would be on APN 078-172-001 (the easternmost parcel on the solar project site), as shown in Figure 2-2.

Site security would consist of a 6- to 10-foot-high chain-link fence installed around the perimeter of solar panel arrays with a second perimeter fence with lighting securing the solar project substation. Additional site security measures would include a monitored camera system designed to cover the entire facility. Signs warning of high voltage danger would be posted on the array fences and at all entry points to the solar project site. These signs would also include a “no trespassing” statement as well as identify the solar project operator and owner and provide emergency contact information.

The solar project design also includes 92 acres of utility and transmission line easements transecting the solar project site which would not be developed, facilitating wildlife movement through the solar project site (shown in Figure 2-2).

Operations and Maintenance

Once in operation, the solar project would generate electricity during daylight hours (i.e., from dusk to dawn). Typically, the solar project would produce energy from 6:00 a.m. until 6:00 p.m.

The project site will be managed from off-site maintenance and operation facilities. Facility maintenance for the solar project would include the periodic maintenance of buildings, solar panels, solar components, and the internal road network. The level of vehicle activity entering and leaving the solar project site during operation would be limited to scheduled and emergency maintenance visits and infrequent delivery vehicles. Up to eight employees would visit the solar project site on a daily basis to service and maintain buildings, solar panels and solar components. Scheduled solar project maintenance would occur in the early evening or early morning hours to avoid interference with the solar project’s peak hours of generation.

The project’s operational water demand would include water used for solar panel washing and limited irrigation. One 5,000-gallon water tank would be permanently installed in the northwest portion of the solar project site to store water for fire flow and fire suppression in accordance with Section 507.1 of the California Fire Code. Water is proposed to be provided by the San Luis Water

District through a Solar Water Management Agreement and Construction Water Agreement or from the privately owned off-site Mid-Cal Well located approximately 4.4 miles north of the project site through a Merced County Water Export Permit.

Construction

Phased construction of the proposed project is expected to last 14 months, beginning in the fall of 2024 and lasting until approximately mid-2025. Construction activities would occur 6 days a week from 7:00 a.m. to 6:00 p.m., Monday through Saturday. If needed to maintain the construction schedule, low noise-generating construction activities, such as delivery offloads, panel laying, cable laying and terminating, may take place between 6:00 p.m. and 8:00 p.m. However, the solar project applicant would avoid nighttime construction activities within portions of the solar project site that are close to existing residential areas to the greatest extent feasible. Planned construction consists of the following phases, some of which would overlap:

- Site Preparation
- Underground Work
- PV System Installation
- Battery Storage System Install
- Substation and Gen-Tie Line Installation
- Testing and Commissioning
- Project Site Restoration

Decommissioning and Site Reclamation

Decommissioning and site reclamation would occur at the end of the 35-year lifespan of the solar project, expected in 2060. A decommissioning plan would be prepared in accordance with Merced County requirements. The decommissioning and site reclamation process is expected to take approximately 12 months, and given the large footprint of the solar project, the process may be completed in multiple phases to ensure the entire solar project site is returned to its prior condition.

Proposed PG&E Substation Improvements

The proposed project includes transmission system improvements to PG&E's Los Banos Substation to connect the PG&E substation to the solar project and facilitate the delivery of power from the solar project. The existing substation fence will be moved outward to the south and east, on existing substation property, to accommodate the additional equipment required, including new electric equipment, circuit breakers, bus structures, 70-kilovolt disconnect switches, transformers, protective relaying, metering and control equipment, telemetering equipment, an electric grounding system, and underground conduits or trench systems. The area within the modified fence would be graveled and encompass an additional approximately 450,000 square feet (10.3 acres) of existing PG&E-owned substation property.

Construction of the PG&E substation improvements would overlap with the multiple solar project construction phases, and would take approximately eight months to complete.

Land Use Redesignations and Rezoning

Construction and operation of utility-scale facilities or high-voltage electrical infrastructure is not allowed in some of the zoning designations applied to portions of the solar project site. Therefore, the project also proposes to amend the Merced County General Plan and the Villages of Laguna San Luis Community Plan to create a Utility-Scale Solar Overlay and associated zone change covering the solar project site that would allow conditional use of the site for energy generation and public utilities facilities. The proposed General Plan amendment would include a sunset date of 40 years after the approval date of the amendment and overlay. This would allow the solar project to be constructed and operated for its full 35-year lifespan, and properly decommissioned before the solar project site is returned to a physical state consistent with the prior condition of the site and zoning designation appropriate for real estate development.

The proposed project would also require an amendment to the General Plan to re-designate roughly 202.8 acres off-site and immediately south of the solar project site from low-density residential to high-density/medium-density residential (off-site General Plan amendment). The 202.8 acres are referred to as the “off-site residential redesignation area.” This change would preserve the supply of medium-density and/or high-density units that could be developed in the County during the life of the solar project. The proposed change in the allowed density for the off-site residential redesignation area would sunset at the same time as the General Plan amendment, and the land use designation of the Community Plan and zoning for that area would revert to those that currently exist.

Off-Site Mitigation Site

The U.S. Fish and Wildlife Service (USFWS) is considering issuing an incidental take permit (ITP) under Section 10 (a)(1)(B) of the federal Endangered Species Act (ESA) for the take of San Joaquin kit fox, a federally-listed endangered species. Under Section 10(a)(2)(A) of the ESA, any application for an ITP must include a “habitat conservation plan” that details the impacts of the incidental take allowed by the ITP on affected species and how the impacts of incidental take will be minimized and mitigated to the maximum extent practicable. Similarly, the California Department of Fish and Wildlife (CDFW) is considering issuing a state ITP under Fish and Game Code Section 2081(b) for the San Joaquin kit fox (also a state-listed threatened species) and Swainson’s hawk, a state-listed threatened species. Under Fish and Game Code Section 2081(b), permittees must implement species-specific minimization and avoidance measures, and fully mitigate the impacts of the project.

The mitigation proposal included in the applications for the ITPs include the establishment of an offsite mitigation site for the San Joaquin kit fox and other covered species, as necessary. An area of at least 1,498 acres of grassland habitat would be placed into a conservation easement in perpetuity. The proposed permit term is 40 years, and encompasses construction, operation and maintenance, and decommissioning activities. The off-site mitigation site is located approximately 5 miles south of the solar project site, immediately south of Los Banos Reservoir (see Figure 2-2).

All mitigation lands would adhere to County ordinances regarding fire protection, fire breaks, and fire management. Activities on these lands include monitoring of the conservation easement. The existing fencing around the perimeter of the mitigation site would reduce vandalism and

theft and would be designed to allow for continued dispersal of special-status and common wildlife that may use the mitigation lands. Targeted invasive plant management activities would be necessary to prevent invasion by pest plant species.

Refer to Chapter 2, *Project Description*, of this SEIR for a detailed description of the project components and required governmental approvals.

ES.2 Project Objectives

The essential goal of the project is to provide renewable solar -sourced electricity at a competitive price. The project applicant is proposing to construct the project to meet the following objectives:

- Provide an energy storage system of up to 100 MW AC or DC battery storage capacity.
- Reduce environmental impacts by siting the project adjacent to existing powerline infrastructure.
- Develop a project that can provide renewable-sourced solar energy at a competitive price.
- Assist the State of California in complying with Senate Bill (SB) 100 (California Renewables Portfolio Standard Program) and California utilities in meeting their obligations under California's Renewables Portfolio Standard (RPS) Program to have 100 percent zero-carbon and eligible renewable resources by 2045 to help fulfill federal, state, and county renewable energy mandates.
- Support the efforts of Merced County and the State of California to reduce greenhouse gas (GHG) emissions consistent with the timeline established by California Senate Bill (SB) 32, the Global Warming Solutions Act of 2016.
- Further the goals of AB 1279, the California Climate Crisis Act, to achieve net zero greenhouse gas emissions no later than 2045, and SB 1020, the Clean Energy, Jobs, and Affordability Act of 2022, requiring that eligible renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by 2035.
- Support the energy goals stated in the 2030 Merced County General Plan, as well as other policies in the plan designed to protect Merced County's environment and economy.
- Generate clean, reliable electricity and provide long-term property tax revenue that would support public services and create jobs within Merced County and in California, while also providing direct revenue to Merced County landowners.
- Maintain the total high-density/medium-density residential development capacity in Merced County, ensuring that the County is able to meet its Regional Housing Needs Assessment (RHNA) allocation in accordance with the County's Housing Element and State law (Government Code Section 65580 (et seq.)).
- Maintain the area for future use as an agricultural use or as designated in the Community Plan through creation of a Solar Facility Overlay Zone to allow interim use of a solar project for the 35-year life of the project.
- Provide and maintain adequate habitat for regulated species such as San Joaquin kit fox.

ES.3 Project Impacts and Mitigation Measures

Pursuant to Public Resources Code Section 21061 and CEQA Guidelines Section 15150, analysis presented in this SEIR incorporates by reference information in the 2030 Merced County General Plan Update EIR (General Plan EIR) and the Villages of Laguna San Luis Community Plan EIR (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Project impacts and mitigation measures are described in Chapters 3.1 through 3.20 of this SEIR. Cumulative impacts are described in Chapter 5, *Other Required CEQA Consideration*.

ES.3.1 Summary of Project Impacts

Table ES-1 summarizes the impacts and mitigation measures identified in this SEIR for the proposed project, including all project components. To highlight impacts specific to the solar project and facilitate mitigation monitoring for the solar project, Table ES-1 also lists which Community Plan EIR mitigation measures are applicable to the solar project, and where new project-specific mitigation measures are required for the solar project.

ES.3.2 Summary of Impacts Associated with the PG&E Substation Improvements

As discussed above in section ES.1.3, *Project Components*, the proposed project includes proposed improvements to the PG&E Los Banos Substation. As such, the SEIR includes in its analysis the potential impacts associated with the PG&E Substation Improvements project construction and operational activities. PG&E may use the findings from this SEIR in securing its own discretionary approvals subject to CEQA.

The following topics are analyzed in detail in Chapter 3, Sections 3.1 through 3.20 of this SEIR:

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology, Soils, and Paleontological Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Utilities and Service Systems
- Wildfire

The impact determinations for each topic account for the PG&E's standard avoidance and minimization measures (AMMs) and best management practices (BMPs) employed during construction and operations of projects in its service territory (described in detail in Chapter 2, section 2.2.3).

In summary, the SEIR concludes that the PG&E Substation Improvement project would result in no new or substantially more severe significant impacts beyond those identified in the Community Plan EIR and no additional mitigation would be required.

Table ES-1. Impacts and Mitigation Measures, by Resource Topic

Impact	Community Plan EIR Level of Significance after Mitigation	Impact of the Proposed Project ¹	Community Plan EIR Mitigation Measures Applied to Proposed Solar Project ²	Project-Specific Mitigation Measures Applied to Proposed Solar Project	SEIR Level of Significance after Mitigation
Aesthetics					
Impact AES-1: Potential to substantially degrade the existing visual character or quality of public views of the site and its surroundings (in nonurbanized areas), including scenic vistas	Significant and Unavoidable	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Community Plan EIR did not contain feasible mitigation measures or policies to reduce impact.	Mitigation Measure AES-1: Install landscape buffer along SR 152	Significant and Unavoidable
Impact AES-2: Potential to substantially damage scenic resources (including trees, rock outcroppings, and historic buildings) within a state scenic highway	Significant and Unavoidable	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Community Plan Mitigation Measures would not apply to solar project.	Mitigation Measure AES-1: Install landscape buffer along SR 152	Significant and Unavoidable
Impact AES-3: Introduction of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area	Significant and Unavoidable	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Community Plan Mitigation Measures would not apply to solar project.	Mitigation Measure AES-3: Limit construction to daylight hours near residences	Significant and Unavoidable
Agricultural Resources					
Impact AG-1: Conversion of important farmland to nonagricultural use	Significant and Unavoidable	No new or substantially more severe significant impacts	None. Community Plan Mitigation Measures would not apply to solar project.	None required	Significant and Unavoidable
Impact AG-2: Conflict with existing zoning for agricultural use or with a Williamson Act contract	Less than Significant	No new or substantially more severe significant impacts	None required	None required	Less than Significant
Impact AG-3: Potential to cause changes in the existing environment that could result in conversion of important farmland to nonagricultural use	No Impact	No new or substantially more severe significant impacts	None required	None required	No Impact
Air Quality					
Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan	Significant and Unavoidable	No new or substantially more severe significant impacts	None. Community Plan Mitigation Measures would not apply to solar project.	None required	Significant and Unavoidable
Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project is a nonattainment area for an applicable federal or state ambient air quality standard	Significant and Unavoidable	No new or substantially more severe significant impacts with implementation of Community Plan mitigation	Community Plan Mitigation Measure 5.12-1b Community Plan Mitigation Measure 5.12-1c	None required	Significant and Unavoidable
Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations	Significant and Unavoidable	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Community Plan Mitigation Measures would not apply to solar project.	Mitigation Measure AQ-3: Implement Additional Dust Control Measures to Reduce Exposure to the Coccidioides Immitis Fungus During Solar Project Construction	Significant and Unavoidable
Impact AQ-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people	Significant and Unavoidable	No new or substantially more severe significant impacts	None. Community Plan Mitigation Measures would not apply to solar project.	None required	Significant and Unavoidable

Impact	Community Plan EIR Level of Significance after Mitigation	Impact of the Proposed Project ¹	Community Plan EIR Mitigation Measures Applied to Proposed Solar Project ²	Project-Specific Mitigation Measures Applied to Proposed Solar Project	SEIR Level of Significance after Mitigation
Biological Resources					
Impact BIO-1: Potential to adversely effect, either directly or through habitat modifications, on any special-status species	Less than Significant	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Project-specific Mitigation Measures would replace Community Plan Mitigation Measures.	Mitigation Measure BIO-1a: Avoid and minimize impacts on biological resources Mitigation Measure BIO-1b: Avoid and minimize effects on nesting Swainson’s hawks Mitigation Measure BIO-1c: Avoid, minimize, and compensate for potential impacts on western burrowing owl Mitigation Measure BIO-1d: Avoid and minimize impacts on nesting birds Mitigation Measure BIO-1e: Minimize the potential for birds to be affected by new project transmission lines Mitigation Measure BIO-1f: Avoid and minimize impacts on American badger Mitigation Measure BIO-1g: Avoid and minimize impacts on Tule Elk and Mountain Lion	Less than Significant
Impact BIO-2: Potential adverse effect on state or federally protected wetlands	Less than Significant	No new or substantially more severe significant impacts	None. Community Plan Mitigation Measures would not apply to solar project.	None required	Less than Significant
Impact BIO-3: Potential disruption of wildlife movement corridor	Less than Significant	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Project-specific Mitigation Measures would replace Community Plan Mitigation Measures.	Mitigation Measure BIO-1a: Avoid and minimize impacts on biological resources Mitigation Measure BIO-1b: Avoid and minimize effects on nesting Swainson’s hawks Mitigation Measure BIO-1c: Avoid, minimize, and compensate for potential impacts on western burrowing owl Mitigation Measure BIO-1d: Avoid and minimize impacts on nesting birds Mitigation Measure BIO-1e: Minimize the potential for birds to be affected by new project transmission lines Mitigation Measure BIO-1f: Avoid and minimize impacts on American badger Mitigation Measure BIO-1g: Avoid and minimize impacts on Tule Elk and Mountain Lion	Less than Significant
Impact BIO-4: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Less than Significant	No new or substantially more severe significant impacts	None required	None required	Less than Significant
Impact BIO-5: Conflict with provisions of an adopted habitat conservation plan/natural communities conservation plan or other approved local, regional, or state habitat conservation plan	Less than Significant	No new or substantially more severe significant impacts	None required	None required	Less than Significant

Impact	Community Plan EIR Level of Significance after Mitigation	Impact of the Proposed Project ¹	Community Plan EIR Mitigation Measures Applied to Proposed Solar Project ²	Project-Specific Mitigation Measures Applied to Proposed Solar Project	SEIR Level of Significance after Mitigation
Cultural Resources					
Impact CUL-1: Potential to cause a substantial adverse change in the significance of a historical resource	Less than Significant	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Project-specific Mitigation Measures would replace Community Plan Mitigation Measures.	Mitigation Measure CUL-1: Unanticipated Discovery Procedures Mitigation Measure CUL-2: Restrict Overland Vehicle Travel to Existing Roads During Biological Monitoring at Off-Site Mitigation Site Mitigation Measure CUL-3: Avoidance of Archaeological Resources During Mechanical Invasive Plant Abatement Activities at Off-Site Mitigation Site	Less than Significant
Impact CUL-2: Potential to cause a substantial adverse change in the significance of an archaeological resource	Less than Significant	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Project-specific Mitigation Measures would replace Community Plan Mitigation Measures.	Mitigation Measure CUL-1: Unanticipated Discovery Procedures Mitigation Measure CUL-2: Restrict Overland Vehicle Travel to Existing Roads During Biological Monitoring at Off-Site Mitigation Site (Mitigation Measure CUL-3: Avoidance of Archaeological Resources During Mechanical Invasive Plant Abatement Activities at Off-Site Mitigation Site	Less than Significant
Impact CUL-3: Disturbance of any human remains, including those interred outside of formal cemeteries	Less than Significant	No new or substantially more severe significant impacts with implementation of Community Plan and project-specific mitigation	Community Plan Mitigation Measure 5.9-3: Discovery of human remains protocols	Mitigation Measure CUL-2: Restrict Overland Vehicle Travel to Existing Roads During Biological Monitoring at Off-Site Mitigation Site Mitigation Measure CUL-3: Avoidance of Archaeological Resources During Mechanical Invasive Plant Abatement Activities at Off-Site Mitigation Site	Less than Significant
Energy					
Impact EN-1: Potential to result in environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation	Less than Significant	No new or substantially more severe significant impacts	None required	None required	Less than Significant
Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	Less than Significant	No new or substantially more severe significant impacts	None required	None required	Less than Significant
Geology, Soils, and Paleontological Resources					
Impact GEO-1: Direct or indirect exposure of people or structures to potential substantial adverse effects involving strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides	Less than Significant	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Community Plan Mitigation Measures would not apply to solar project.	Mitigation Measure GEO-1: Implement Site-Specific Recommendations in a Geotechnical Report for the Solar Project	Less than Significant

Impact	Community Plan EIR Level of Significance after Mitigation	Impact of the Proposed Project ¹	Community Plan EIR Mitigation Measures Applied to Proposed Solar Project ²	Project-Specific Mitigation Measures Applied to Proposed Solar Project	SEIR Level of Significance after Mitigation
Impact GEO-2: Potential to result in substantial soil erosion or the loss of topsoil	Less than Significant	No new or substantially more severe significant impacts with implementation of Community Plan and project-specific mitigation	Community Plan Mitigation Measure 5.3-4: Prepare grading and erosion control plans and SWPPPs that contain specific measures to reduce erosion.	Mitigation Measure WQ-1: Implement Best Management Practices During Solar Project Construction and Decommissioning	Less than Significant
Impact GEO-3: Placement of project-related facilities on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse	Less than Significant	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Community Plan Mitigation Measures would not apply to solar project.	Mitigation Measure GEO-1: Implement Site-Specific Recommendations in a Geotechnical Report for the Solar Project	Less than Significant
Impact GEO-4: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property	Less than Significant	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Community Plan Mitigation Measures would not apply to solar project.	Mitigation Measure GEO-1: Implement Site-Specific Recommendations in a Geotechnical Report for the Solar Project	Less than Significant
Impact GEO-5: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	Less than Significant	No new or substantially more severe significant impacts with implementation of Community Plan mitigation	Community Plan Mitigation Measure 5.3-8: a. Retain Qualified Paleontological Principal Investigator to conduct preconstruction training b. Prepare, approve and adhere to process for inadvertent discoveries of paleontological resources	None required	Less than Significant
Greenhouse Gas Emissions (GHG)					
Impact GHG-1: Generation of GHG emissions that may have a significant impact on the environment	No impact determination made	No new or substantially more severe significant impacts	None required	None required	Less than Significant
Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG	No impact determination made	No new or substantially more severe significant impacts	None required	None required	Less than Significant
Hazards and Hazardous Materials					
Impact HAZ-1: Creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	Less than Significant	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None required. Project-specific Mitigation Measures would replace Community Plan Mitigation Measures.	Mitigation Measure WQ-1: Implement Best Management Practices During Solar Project Construction and Decommissioning Mitigation Measure WF-3a: Fit Battery Containers with a Fire Suppression System Mitigation Measure WF-3b: Implement a Fire Protection Plan	Less than Significant
Impact HAZ-2: Creation of a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	Less than Significant	No new or substantially more severe significant impacts	None. Community Plan Mitigation Measures would not apply to solar project.	None required	Less than Significant

Impact	Community Plan EIR Level of Significance after Mitigation	Impact of the Proposed Project ¹	Community Plan EIR Mitigation Measures Applied to Proposed Solar Project ²	Project-Specific Mitigation Measures Applied to Proposed Solar Project	SEIR Level of Significance after Mitigation
Impact HAZ-3: Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school	Less than Significant	No new or substantially more severe significant impacts with implementation of Community Plan mitigation and project-specific mitigation	Community Plan Mitigation Measure 5.4-3: Exposure to Pipeline Hazards Other Community Plan Mitigation Measures would not apply to solar project.	Mitigation Measure WF-3a: Fit Battery Containers with a Fire Suppression System Mitigation Measure WF-3b: Implement a Fire Protection Plan	Less than Significant
Impact HAZ-4: Placement of project-related facilities on a site that is included on a list of hazardous materials sites, and resulting creation of a significant hazard to the public or the environment	Less than Significant	No new or substantially more severe significant impacts	None. Community Plan Mitigation Measures would not apply to solar project.	None required	Less than Significant
Impact HAZ-5: Impairment of implementation of, or physical interference with an adopted emergency response plan or emergency evacuation plan	See Impact WF-2	See Impact WF-2	See Impact WF-2	See Impact WF-2	See Impact WF-2
Impact HAZ-6: Exposure of people or structures to a significant risk involving wildland fires	See Impact WF-2	See Impact WF-2	See Impact WF-2	See Impact WF-2	See Impact WF-2
Hydrology and Water Quality					
Impact WQ-1: Violation of any water quality standard or waste discharge requirements or otherwise substantially degrade surface or ground water quality	Less than Significant	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Project-specific Mitigation Measures would replace Community Plan Mitigation Measures.	Mitigation Measure WQ-1: Implement Best Management Practices During Solar Project Construction and Decommissioning	Less than Significant
Impact WQ-2: Substantial depletion of groundwater supplies or substantial interference with groundwater recharge	Less than Significant	No new or substantially more severe significant impacts	None required	None required	Less than Significant
Impact WQ-3: Substantial alteration of existing drainage patterns in a manner that would result in: <ul style="list-style-type: none"> • substantial erosion or siltation onsite or offsite; • flooding onsite or offsite; • contribution to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or • impediment or redirection of flood flows 	Less than Significant	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Project-specific Mitigation Measures would replace Community Plan Mitigation Measures.	Mitigation Measure WQ-1: Implement Best Management Practices During Solar Project Construction and Decommissioning	Less than Significant
Impact WQ-4: Release pollutants due to project-induced inundation by seiche, tsunami, or mudflow	Less than Significant	No new or substantially more severe significant impacts	None required	None required	Less than Significant

Impact	Community Plan EIR Level of Significance after Mitigation	Impact of the Proposed Project ¹	Community Plan EIR Mitigation Measures Applied to Proposed Solar Project ²	Project-Specific Mitigation Measures Applied to Proposed Solar Project	SEIR Level of Significance after Mitigation
Impact WQ-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan	Less than Significant	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Project-specific Mitigation Measures would replace Community Plan Mitigation Measures.	Mitigation Measure WQ-1: Implement Best Management Practices During Solar Project Construction and Decommissioning	Less than Significant
Land Use and Planning					
Impact LU-1: Physical division of an established community	Less than Significant	No new or substantially more severe significant impacts	None required	None required	Less than Significant
Impact LU-2: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect	Less than Significant	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Community Plan Mitigation Measures would not apply to solar project.	Mitigation Measure AES-1: Install landscape buffer along SR 152 Mitigation Measure AES-3: Limit construction to daylight hours near residences Mitigation Measure AQ-3: Implement Additional Dust Control Measures to Reduce Exposure to the Coccidioides Immitis Fungus During Solar Project Construction Mitigation Measure CUL-1: Unanticipated Discovery Procedures Mitigation Measure NOI-1: Design the emergency generator installation to comply with the requirements of the MCC during periodic testing Mitigation Measure WF-3a: Fit Battery Containers with a Fire Suppression System Mitigation Measure WF-3b: Implement a Fire Protection Plan	Less than Significant
Mineral Resources					
Impact MIN-1: Loss of availability of a known mineral resource that would be of value to the region and the residents of the state	No Impact	No new or substantially more severe significant impacts	None required	None required	Less than Significant
Noise					
Impact NOI-1: Generation of a substantial temporary or permanent increase in existing ambient noise levels in the project vicinity	Significant and Unavoidable	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Community Plan Mitigation Measures would not apply to solar project.	Mitigation Measure NOI-1: Design the solar project emergency generator installation to comply with the requirements of the MCC during periodic testing	Significant and Unavoidable
Impact NOI-2: Generation of excessive ground-borne vibration or ground-borne noise levels	Less than Significant	No new or substantially more severe significant impacts	None. Community Plan Mitigation Measures would not apply to solar project.	None required	Less than Significant
Impact NOI-3: Presence of project-related activities within vicinity of a private airstrip or an airport land use plan, or within 2 miles of a public airport or public use airport, resulting in exposure of people residing or working in the project area to excessive noise levels	No Impact	No new or substantially more severe significant impacts	None required	None required	No Impact

Impact	Community Plan EIR Level of Significance after Mitigation	Impact of the Proposed Project ¹	Community Plan EIR Mitigation Measures Applied to Proposed Solar Project ²	Project-Specific Mitigation Measures Applied to Proposed Solar Project	SEIR Level of Significance after Mitigation
Population and Housing					
Impact POP-1: Induce substantial unplanned population growth in an area, either directly or indirectly	Less than Significant	No new or substantially more severe significant impacts	None required	None required	Less than Significant
Public Services					
Impact PS-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a 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	Less than Significant	No new or substantially more severe significant impacts	None required	None required	Less than Significant
Recreation					
Impact REC-1: Increase in 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	Less than Significant	No new or substantially more severe significant impacts	None required	None required	Less than Significant
Transportation/Traffic					
Impact TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities	Less than Significant	No new or substantially more severe significant impacts with implementation of Community Plan mitigation	5.14-9: Construction-Related Impacts. Other Community Plan Mitigation Measures would not apply to solar project.	None required	Less than Significant
Impact TRA-2: Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)	No impact identified	No new or substantially more severe significant impacts	None. Community Plan Mitigation Measures would not apply to solar project.	None required	Less than Significant
Impact TRA-3: Substantial increase in traffic hazards due to design feature or incompatible uses	Less than Significant	No new or substantially more severe significant impacts with implementation of Community Plan mitigation	5.14-9: Construction-Related Impacts.	None required	Less than Significant
Impact TRA-4: Inadequate emergency access during construction	Less than Significant	No new or substantially more severe significant impacts	None. Community Plan Mitigation Measures would not apply to solar project.	None required	Less than Significant
Tribal Cultural Resources					
Impact TCR-1: Impact a tribal cultural resource, defined in Public Resources Code section 21074, resources listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1	Less than Significant	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None. Project-specific Mitigation Measures would replace Community Plan Mitigation Measures.	Mitigation Measure CUL-1: Unanticipated Discovery Procedures Mitigation Measure CUL-2: Restrict Overland Vehicle Travel to Existing Roads During Biological Monitoring at Off-Site Mitigation Site	Less than Significant

Impact	Community Plan EIR Level of Significance after Mitigation	Impact of the Proposed Project ¹	Community Plan EIR Mitigation Measures Applied to Proposed Solar Project ²	Project-Specific Mitigation Measures Applied to Proposed Solar Project	SEIR Level of Significance after Mitigation
Utilities					
Impact UT-1: Construction or relocation of new water or wastewater treatment facilities, electric power, natural gas or telecommunication facilities, or expansion of existing facilities, with the potential to cause significant environmental effects	Significant and Unavoidable	No new or substantially more severe significant impacts	None. Community Plan Mitigation Measures would not apply to solar project.	None required	Significant and Unavoidable
Impact UT-2: Sufficient available water supplies to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years	Significant and Unavoidable	No new or substantially more severe significant impacts	None. Community Plan Mitigation Measures would not apply to solar project.	None required	Significant and Unavoidable
Impact UT-3: Project-related exceedance of existing wastewater treatment capacity	Significant and Unavoidable	No new or substantially more severe significant impacts	None. Community Plan Mitigation Measures would not apply to solar project.	None required	Significant and Unavoidable
Impact UT-4: Project-related exceedance of the relevant landfill's permitted capacity	Significant and Unavoidable	New or substantially more severe significant impacts	No feasible mitigation identified	No feasible mitigation is available	Significant and Unavoidable
Impact UT-5: Inconsistency with federal, state, and local statutes and regulations related to solid waste	Significant and Unavoidable	No new or substantially more severe significant impacts	No feasible mitigation identified	None required	Significant and Unavoidable
Wildfire					
Impact WF-1: Substantially impair an adopted emergency response plan or emergency evacuation plan	Less than Significant	No new or substantially more severe significant impacts	None. Community Plan Mitigation Measures would not apply to solar project.	None required	Less than Significant
Impact WF-2: Expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire	Less than Significant	No new or substantially more severe significant impacts	None required	None required	Less than Significant
Impact WF-3: Require the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment	Less than Significant	No new or substantially more severe significant impacts with implementation of project-specific mitigation	None required	Mitigation Measure WF-3a: Fit Battery Containers with a Fire Suppression System Mitigation Measure WF-3b: Implement a Fire Protection Plan	Less than Significant
Impact WF-4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes	Less than Significant	No new or substantially more severe significant impacts	None required	None required	Less than Significant

¹ Impacts of the proposed project as evaluated against the impacts identified in the Community Plan EIR.

² Future development within the off-site residential redesignation area portion of the proposed project would be subject to the policies in the Villages of Laguna San Luis Community Plan (Community Plan) (adopted in 2008) and the mitigation measures in the Community Plan EIR (State Clearinghouse No. 205511074).

ES.3.3 Significant and Unavoidable Impacts

A significant and unavoidable impact is one that would cause a substantial adverse effect on the environment and for which mitigation is not available to reduce the impact to a less-than-significant level. As discussed in Chapter 3, *Impact Analysis*, of this SEIR, the proposed project would result in the following significant and unavoidable impacts, all of which were identified as significant and unavoidable impacts in the Community Plan EIR and included in the Statement of Overriding Considerations (SOC) adopted by the County on September 2, 2008:

- **Impact AES-1:** Potential to substantially degrade the existing visual character or quality of public views of the site and its surroundings (in nonurbanized areas), including scenic vistas. The solar project would introduce solar facilities within scenic vistas.
- **Impact AES-2:** Potential to substantially damage scenic resources (including trees, rock outcroppings, and historic buildings) within a state scenic highway. The solar project would introduce solar facilities within viewsheds from State Route (SR), a scenic highway.
- **Impact AES-3:** Introduction of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area. The solar project would introduce nighttime construction lighting near adjacent residential uses.
- **Impact AQ-3:** Expose sensitive receptors to substantial pollutant concentrations. Grading for the solar project could release spores of the *Coccidioides immitis* fungus, including additional grading outside the Community Plan area.
- **Impact BIO-1:** Potential to adversely effect, either directly or through habitat modifications, on any special-status species. Construction and operation of the solar project could adversely affect golden eagle, Swainson's hawk, western burrowing owl, loggerhead shrike, American badger, and San Joaquin kit fox, including within potential habitat areas outside the Community Plan area.
- **Impact BIO-3:** Potential disruption of wildlife movement corridor. Solar project features and lighting could disturb wildlife movement through the project area, including areas outside the Community Plan area.
- **Impact CUL-1:** Potential to cause a substantial adverse change in the significance of a historical resource. Construction activities for the solar project could encounter unknown historical resources, including within areas outside the Community Plan area.
- **Impact CUL-2:** Potential to cause a substantial adverse change in the significance of an archaeological resource. Construction activities for the solar project could encounter unknown archaeological resources, including within areas outside the Community Plan area.
- **Impact CUL-3:** Disturbance of any human remains, including those interred outside of formal cemeteries. Construction activities for the solar project could encounter unknown human remains, including within areas outside the Community Plan area.
- **Impact GEO-1:** Direct or indirect exposure of people or structures to potential substantial adverse effects involving strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides. The solar project would introduce structures that are susceptible to strong seismic ground shaking and damage, including structures within areas outside the Community Plan area.

- **Impact GEO-2:** Potential to result in substantial soil erosion or the loss of topsoil. Grading for the solar project could cause erosion, including additional grading outside the Community Plan area.
- **Impact GEO-3:** Placement of project-related facilities on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse. The solar project would introduce structures that are susceptible to seismic hazards and damage, including structures within areas outside the Community Plan area.
- **Impact GEO-4:** Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property. The solar project would introduce structures that are susceptible to damage from expansive soils, including structures within areas outside the Community Plan area.
- **Impact GEO-5:** Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Construction activities for the solar project could encounter unknown paleontological resources, including within areas outside the Community Plan area.
- **Impact HAZ-3:** Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. If future schools within the Community Plan area are constructed near the solar project, the schools could be exposed to health and safety impacts from solar project pipelines and electrical transmission lines.
- **Impact WQ-1:** Violation of any water quality standard or WDR. Construction activities for the solar project could impair surface and groundwater quality, including within areas outside the Community Plan area.
- **Impact WQ-5:** Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Construction activities for the solar project could impair surface and groundwater quality, including within areas outside the Community Plan area.
- **Impact LU-2:** Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. Because of the project-specific significant impacts included in this list, the project could conflict with County General Plan and Community Plan policies adopted for the purpose of avoiding or mitigating an environmental effect.
- **Impact NOI-1:** Generation of a substantial temporary or permanent increase in existing ambient noise levels in the project vicinity. The solar project could require emergency generator testing, which could result in noise levels that exceed the County's allowable noise levels.
- **Impact TCR-1:** Impact a tribal cultural resource, defined in Public Resources Code section 21074, resources listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1. Construction activities for the solar project could encounter unknown tribal cultural resources, including within areas outside the Community Plan area.

- **Impact UT-4:** Project-related exceedance of the relevant landfill's permitted capacity. Landfill capacity in the County has not been identified beyond 2054. It is unknown whether sufficient landfill capacity will exist to serve project operation and decommissioning between 2054 and 2060.
- **Impact WF-3:** Require the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. Construction and operation of the solar project would introduce equipment, including Li-ion batteries, that could exacerbate the risk of wildfire, including in areas outside the Community Plan.

The SEIR analysis determined that with implementation of applicable Community Plan mitigation measures and new project-specific mitigation measures, no new significant impacts or substantially more severe significant impacts would occur compared to the significant impacts identified in the previous EIR, with one exception: Impact UT-4 (project-related exceedance of the relevant landfill's permitted capacity). Under the proposed project, this impact would remain significant and unavoidable and would be more severe than the significant and unavoidable impact identified in the previous EIR due to the additional solid waste that would be generated during solar project decommissioning (and to a lesser extent, operation between 2054 and 2060).

ES.4 Project Alternatives

The project alternatives and their potential impacts are discussed in Chapter 4, *Alternatives Analysis*, of this SEIR. The Lead Agency considered nine alternatives to the proposed project:

- No Project Alternative
- Reduced Footprint Alternative
- Offsite Alternative
- Wind Power Alternative
- No Residential Redesignation Alternative
- Relocated Residential Redesignation Alternative
- Increased Setback Near SR 152 Alternative
- Reduced Footprint Outside Community Plan Area Alternative
- No Emergency Generator Alternative

Of the nine alternatives considered, two were selected for evaluation in the SEIR: No Project Alternative and Reduced Footprint Alternative. The remaining alternatives were rejected for further analysis based on infeasibility, inability to reduce the project's significant impacts, and/or inability to meet the basic project objectives.

As authorized under the California Environmental Quality Act (CEQA), the alternatives are discussed in less detail than the project. The No-Project Alternative reflects a reasonably foreseeable view of the future use of the project site.

ES.5 Potential Areas of Controversy/Issues to Be Resolved

The Merced County (County) Community and Economic Development Department issued a Notice of Preparation (NOP) of an EIR for the proposed Las Camas Solar project on August 13, 2021, in compliance with Title 14, Sections 15082(a), 15103, and 15375 of the California Code of Regulations. The NOP review period commenced on August 13, 2021, and concluded on September 13, 2021. An online scoping meeting was held on August 25, 2021.

The County received 12 comment letters from public agencies and interested parties during the public review and comment period. The County has considered the comments made by the public in preparation of the SEIR for the proposed project. A copy of the NOP and all comments received on the NOP are provided in Appendix 1-2. Based on the comments received during the scoping process, areas of known controversy and issues to be resolved include:

- Potential land use conflicts due to proximity of solar project site and off-site residential redesignation area to the Billy Wright landfill;
- Impacts of zone change on planned community development and potential expansion of the Billy Wright landfill;
- Construction impacts on sensitive receptors, including impacts from air emissions, dust, and noise;
- Traffic impacts from construction vehicles;
- Groundwater availability and the project's contribution to regional water supply demands in the event groundwater is used as a water source;
- Impacts to existing San Luis Water District facilities; and
- Visual impacts of solar panels and gen-tie line poles on residential area to north of project site.

ES.6 How to Comment on This Draft SEIR

The draft SEIR is now being made available for review and comment by public agencies and the public. The review period is from May 3 to June 17, 2023. Please submit your comments to the Merced County Community and Economic Development Department by the end of the review period.

Copies of this draft SEIR are available for review at the following location.

- Merced County Community and Economic Development Department, 2222 M Street, Merced, CA
Office hours: Monday through Friday 8:30 a.m. to 4:30 p.m.

The draft SEIR is also available online at the Merced County Community and Economic Development Department's website.

- <https://www.countyofmerced.com/414/Environmental-Documents> (see Environmental Impact Reports)

Introduction and Scope of Environmental Impact Report

This chapter outlines the purpose of this subsequent environmental impact report (SEIR), summarizes the environmental review process, and describes the organization of the SEIR.

1.1 The California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires public agencies to identify, disclose, and consider the potential environmental impacts of projects that they are considering for approval. A project that may have a significant impact on the environment cannot be approved unless the public agency makes the approval contingent upon implementation of mitigation measures that will reduce or avoid that impact to the extent feasible. When a project may have significant environmental impacts, the public agency must prepare an EIR before it considers whether to approve the project.

The County of Merced (County) has prepared this draft SEIR and made it available for public review and comment. As discussed below, the draft SEIR will be available for review and comment by the public agencies and the general public for a period of 45 days. Prior to considering the Las Camas Solar Project, the County will prepare a final SEIR that includes the draft SEIR, the comments received on the draft SEIR, written responses to those comments, a list of the commenters, and any revisions made to the draft SEIR in response to the comments. The final SEIR will be considered by County decision-makers when taking action on the project.

1.1.1 Information Incorporated by Reference

CEQA allows incorporation of other public documents by reference. This SEIR incorporates by reference information or analysis from the following adopted plans and supporting environmental documents that were developed by the County as part of its planning process.

- *2030 Merced County General Plan* (County 2013a) – Adopted December 10, 2013; Amended July 12, 2016
- *2030 Merced County General Plan Update: Draft Program Environmental Impact Report* (County 2012) – State Clearinghouse No. 2011041067
- *2030 Merced County General Plan Update: Final Program Environmental Impact Report* (County 2013b) – State Clearinghouse No. 2011041067
- *The Villages of Laguna San Luis Community Plan* (County 2008a) – Adopted September 2, 2008
- *Draft Environmental Impact Report for the Villages of Laguna San Luis Community Plan* (County 2007) – State Clearinghouse No. 205511074
- *Final Environmental Impact Report for the Villages of Laguna San Luis Community Plan* (County 2008b) – State Clearinghouse No. 205511074

As required in CEQA Guidelines Section 15150, where an EIR uses incorporation by reference, the incorporated part of the reference document shall be briefly summarized or described. Where information from the above listed documents is incorporated into this draft SEIR, the incorporated information is briefly summarized or described in the corresponding topic section in Chapter 3, *Impact Analysis*.

Copies of these documents are available to the public at this location:

Merced County Department of Community and Economic Development
2222 M Street
Merced, California, 95340

Electronic copies available at:

- <https://www.countyofmerced.com/100/General-Plan>
- <https://www.countyofmerced.com/1417/Villages-of-Laguna-San-Luis>

1.1.2 The Purpose of This Subsequent Environmental Impact Report

This SEIR has been prepared pursuant to CEQA and the CEQA Guidelines (14 California Code of Regulations 15000 et seq.). CEQA requires that state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects (California Public Resources Code 21000 et seq.).

The purpose of this SEIR is to analyze the environmental impacts of the project, indicate ways to reduce or avoid potential environmental damage of the project, and identify alternatives. CEQA requires that each public agency mitigate or avoid the significant environmental effects of projects it approves or implements whenever feasible.

An EIR is an informational document used to inform public agency decision-makers and the general public of the significant environmental effects of a project, identify possible ways to mitigate or avoid the significant environmental effects, and describe a range of reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project. CEQA requires that state and local government agencies consider the environmental effects of projects over which they have discretionary authority before taking action on those projects (PRC Section 21000 et seq.). CEQA also requires that each public agency avoid or mitigate to less-than-significant levels, wherever feasible, the significant environmental effects of projects it approves or implements. If a project would result in significant and unavoidable environmental impacts (i.e., significant effects that cannot be feasibly mitigated to less-than-significant levels), the project can still be approved, but the lead agency must prepare and issue a “statement of overriding considerations” explaining in writing the specific economic, social, or other considerations that make those significant effects acceptable (PRC Section 21002; CCR Section 15093).

1.1.3 Scope and Level of Detail in This SEIR

Subsequent EIR

The Environmental Impact Report for the Villages of Laguna San Luis Community Plan (Community Plan EIR) evaluated at a program-level impacts from buildout of the Community Plan, including impacts that could result from development of much of the solar project site and all of the off-site residential redesignation area, as a mix of commercial, public facility, and low-, medium-, and high-density residential uses.

The County has prepared this EIR as a subsequent EIR (SEIR) based on the Community Plan EIR, consistent with CEQA Guidelines 15162. This SEIR analyzes the potential significant environmental impacts of the proposed Las Camas Solar Project (proposed project). The proposed project includes constructing, operating, and decommissioning the solar project, its generation tie line (gen-tie line), and the Pacific Gas and Electric Company (PG&E) substation improvements, as well as amendments to the Merced County General Plan and the Community Plan and zoning amendments necessary for approval of the proposed project. Also included in the proposed project is establishment of the off-site mitigation site.

When evaluating whether changes to a project would result in new significant environmental impacts, the lead agency must consider the incremental difference between the original project and the project as modified.¹ The agency's review is limited to new effects not previously considered.²

Changes in the Project from the Previous EIR

Changes to the project that were analyzed in the Community Plan EIR (the previous EIR) consist of: (1) changes to the Villages of San Luis Community Plan, and (2) changes to the proposed land uses and development resulting from the Community Plan (i.e., construction and operation of the proposed solar project, gen-tie line, and PG&E substation improvements). These changes are summarized below and described in more detail in Chapter 2, *Project Description*.

Changes in Community Plan

Construction and operation of utility-scale facilities or high-voltage electrical infrastructure is currently not allowed on the portion of the solar project site that falls within the General Plan's Urban Community land use designation as part of the Community Plan. The Community Plan designates the solar project site for various residential, commercial, and park land uses.

Accordingly, the proposed project would require an amendment to the Merced County General Plan and the Community Plan to create a Utility-Scale Solar Overlay (overlay) and associated zone change covering the solar project site that allows the following as conditional uses:

- Energy Generation Facilities (off-site energy use) as currently allowed by Conditional Use Permits in all agricultural zones;
- Communication Equipment, Electrical Distribution/Transmission, Substation as currently allowed by Conditional Use Permit in all agricultural zones;

¹ See *Benton v Board of Supervisors* (1991) 226 CA3d 1467, 1484, 277 CR 481.

² See *Temecula Band of Luiseño Mission Indians v Rancho Cal. Water Dist.* (1996) 43 CA4th 425, 437, 50 CR2d 769.

- Public Utility Facilities as currently allowed by Conditional Use Permit in Rural Residential zones; and,
- Additional ancillary buildings, fencing, roads, and equipment.

Construction of the solar project would preclude construction of residential units within the solar project site during the life of the solar project. Accordingly, the off-site residential redesignation component of the proposed project is proposed to maintain the amount of housing that could be developed on available land designated for residential development by allowing a higher density of residential units on roughly 202.8 acres within the Community Plan Area south of the solar project site. The off-site General Plan and zoning amendment would do this by specifically redesignating the 202.8 acres from low-density residential to high-density/medium-density residential.

Changes in Proposed Land Uses and Development Resulting from the Community Plan

Most of the solar project site lies within the Community Plan, with land use designations for residential, commercial, public facility, and park land uses. The existing land use is mostly undeveloped, non-native annual grassland, and portions of the solar project site are used for grazing and dry-land farming.

Compared to what was identified in the Community Plan and analyzed in the Community Plan EIR, the change in proposed land use and development within the solar project site would be from residential, commercial, public facility, and park land uses to solar generation facilities, and from single-family residential land uses to high-density/medium-density residential land uses for the off-site residential redesignation area. This change would be in effect for the life of the solar project (40 years).

Additional Proposed Development Outside of the Community Plan

The portion of the solar project site outside of the Community Plan is approximately 561 acres and is designated in the County general plan as Agricultural. Like the land within the Community Plan, this land is mostly undeveloped, non-native annual grassland, with portions used for grazing and dry farming. Development of this land was not considered in the Community Plan EIR.

The off-site mitigation site and the PG&E substation improvements also are not within the Community Plan area and were not considered in the Community Plan EIR.

Level of Detail

Because the off-site residential redesignation would offset potential residential units that otherwise would have been displaced by the solar project, the segments of the proposed project other than the off-site residential redesignation are proposed in addition to rather than instead of the uses contemplated by the Community Plan EIR. As a consequence, all aspects of the proposed project other than the off-site residential redesignation present new or more intense significant impacts beyond those considered in the Community Plan EIR and are analyzed accordingly.

By contrast, because the off-site residential redesignation relocates but does not appreciably increase or decrease the overall number of residential units presently contemplated within the Community Plan, they are less likely to present new or more significant impacts beyond those already contemplated by the Community Plan EIR, and therefore are analyzed by a close comparison against the conclusions of the Community Plan EIR pursuant to CEQA Guidelines 15162.

Project Level Analysis

Potential impacts associated with the solar project, gen-tie, PG&E substation improvements, and off-site mitigation site are analyzed by this SEIR at a project level. The level of detail of the analysis of the solar project in this SEIR matches the level of detail available in the draft plans for the solar project per CEQA Guidelines Section 15145. Additional studies of air quality, biological, noise, transportation, and other impacts have been prepared for this SEIR to provide detailed information about the project's potential impacts on the environment. Where mitigation measures in the previous EIR will apply to the solar project, gen-tie, PG&E Substation improvements, or off-site mitigation area, those measures are expressly identified in this SEIR. However, given the detailed level of information available about these aspects of the proposed project compared to the programmatic analysis in the Community Plan EIR and the differences between these actions and the mixed-use development analyzed in the Community Plan EIR, this SEIR instead largely identifies project-specific mitigation measures to address the impacts of the solar project, gen-tie, and off-site mitigation site at a project level.

Program Level Analysis

Potential impacts associated with the off-site residential redesignation are assessed at the same program level of detail as the Community Plan EIR because no developments have been proposed at the off-site residential redesignation area, and project-level information is not available for speculative future projects in that area. For these reasons and because the off-site residential redesignation component of the project involves residential real estate development highly similar to the uses analyzed in the EIR, the off-site residential redesignation is largely subject to the same mitigation measures in the Community Plan EIR, as specified herein.

1.1.4 Document Format

The draft SEIR is organized in the following chapters.

- Chapter 1, *Introduction*, explains the purpose of this SEIR, and discusses the environmental review process.
- Chapter 2, *Project Description*, describes the project.
- Chapter 3, *Impact Analysis*, is devoted to resource topics. The topics and respective sections are listed in the introduction to this chapter.
- Chapter 4, *Alternatives Analysis*, identifies the alternatives to the project that are being considered to eliminate or reduce significant impacts.
- Chapter 5, *Other Required CEQA Considerations*, presents the analysis of the project's cumulative and growth-inducing impacts. Significant environmental impacts are also summarized in this chapter.
- Chapter 6, *List of Preparers*, lists the SEIR authors, technical specialists and members of the production team, and other key individuals who assisted in the preparation and review of this SEIR.

1.2 Intended Use of This SEIR

An EIR that is certified by a public agency for purposes of analyzing the potential impacts of a project that it is considering can also be used by other public agencies that will consider whether to approve their own permits for the project. This SEIR is expected to be used by the following agencies.

- County of Merced
- Conditional Use Permit (CUP) – CUP Application No. 20-011
- General Plan Amendment (GPA) – GPA Application No. 20-001
- Zone Change – Zone Change Application No. ZC 21-002
 - Community Plan Amendments
- Solar Benefits Agreement/Fiscal Impact Report/Decommissioning Plan

These permits are required to create an overlay on the solar project site and redesignate the approximately 202.8-acre off-site residential redesignation area from single-family residential land use to high-density/medium-density residential land use for the life of the solar project.

- Construction Permit (Building Permits)
- Right-of-Way Encroachment Permit and Right-of-Way Crossing Consent Forms – These permits encompass grading, building, electrical, mechanical, landscaping, and other activities.
- U.S. Fish and Wildlife Service (USFWS) – The applicant would consult with USFWS to obtain an Incidental Take Permit under Section 10 of the federal Endangered Species Act (ESA) for covered species, as necessary.
- California Department of Fish and Wildlife (CDFW) – Incidental Take Permit. The applicant would consult with CDFW to obtain an Incidental Take Permit under Section 2081 of the California Endangered Species Act (CESA) for covered species, as necessary.
- San Joaquin Valley Air Pollution Control District (SJVAPCD) – Indirect Source Review and Dust Control Plan. An Indirect Source Review (District Rule 9510) would be filed with the SJVAPCD to determine potential mitigation, if any, for oxides of nitrogen and particulate matter less than or equal to 10 microns in diameter emissions. A dust control plan is required to be submitted and approved by the SJVAPCD prior to initiation of ground disturbance associated with construction.
- SJVAPCD – Dust Control Plan. A dust control plan would be submitted and approved by the SJVAPCD prior to initiation of ground disturbance activities associated with construction.
- Central Valley Regional Water Quality Control Board (Central Valley Water Board) – National Pollutant Discharge Elimination System (NPDES) Permit and Report of Waste Discharge. Construction of the project would disturb a surface area greater than 1 acre; therefore, the applicant would be required to obtain a NPDES permit from the Central Valley Water Board. As part of this permit, a stormwater pollution prevention plan would be developed and implemented. Pursuant to California Water Code Section 13260, all persons proposing to discharge waste that may affect the quality of waters of the state must submit a Report of Waste Discharge to the Central Valley Water Board, following which the board will either prescribe waste discharge requirements or issue a waiver.

- California Independent System Operator (CAISO) – Connection Approval. CAISO is responsible for management of the flow of electricity across high-voltage, long-distance power lines under its control in California. CAISO approval is required for connecting to the Pacific Gas and Electric Company’s Los Banos substation.
- California Department of Transportation – Right-of-Way Encroachment Permit and Permit for Transportation of Oversized Loads on State Route (SR) 152 during Construction.
- San Luis Water District Solar Water Management Agreement and Construction Water Agreement for Project Water or Merced County Public Works Water Supply Agreement/Well Permit and Water Export Permit for the Use of the off-site Mid-Cal Well.
- California Department of Forestry and Fire Protection (CAL FIRE) and Merced County Fire Department Project Fire Permits.

An EIR does not satisfy the requirements of NEPA. A federal agency that is considering whether to approve permits for this project will prepare its own environmental analysis pursuant to the requirements of NEPA. Consultation with USFWS will be required to address potential effects on federally protected species from the project, the federal ITP, and the related habitat conservation plan (HCP) that is currently being prepared.

1.3 Reviewing an EIR

CEQA does not require formal hearings at any stage of the environmental review process (CEQA Guidelines Section 15202[a]). However, it does encourage “wide public involvement, formal and informal, in order to receive and evaluate public reactions to environmental issues” (CEQA Guidelines Section 15201). The County distributed a notice of preparation (NOP) of a draft EIR for the project on August 13, 2021. The NOP was distributed for a 30-day comment period that ended September 13, 2021. Comments on the NOP were considered in preparation of this SEIR. Appendix 1-2. contains the NOP and the written comments received on the NOP.

The draft SEIR is now being made available for review and comment by public agencies and the public. The review period of this draft SEIR is from May 3, 2024, to June 17, 2024. Copies are available for review at the following location:

- Merced County Community and Economic Development Department, 2222 M Street, Merced, CA. Office hours: Monday through Friday 8:30 a.m. to 4:30 p.m.

The draft SEIR is also available online at the Community and Economic Development Department’s website.

- <https://www.countyofmerced.com/414/Environmental-Documents> (see Environmental Impact Reports)

1.3.1 Making Effective Comments

Readers are invited to review and comment on the adequacy and completeness of this draft SEIR in describing the potential impacts of the project, the level of severity of potential impacts, the mitigation measures being proposed to reduce or avoid those impacts, and the project alternatives being considered. The most effective comments are those that focus on the adequacy and

completeness of the environmental analysis and are supported by factual evidence. Comments that focus on whether the project should be approved or denied are not comments on the adequacy of the draft SEIR.

1.3.2 Submitting Comments

Written comments are to be submitted by mail or email to the following:

Merced County Community and Economic Development Department
2222 M Street
Merced, CA 95340
Attention: Lorri Hammer, Contract Planner
Planning@countyofmerced.com

1.4 Final SEIR

After the end of the review period, the County will review the comments received, prepare written responses to those comments, make any related revisions to the draft SEIR, and publish the final SEIR. The final SEIR will be considered by the County decision-makers when taking action on the project.

If the project is approved, CEQA requires the County to adopt findings that describe how each of the significant impacts identified in the EIR is being mitigated. The findings will also describe the reasons why project alternatives that were analyzed in the SEIR have not been adopted. If the project has significant and unavoidable impacts, the findings will describe the reasons why significant unavoidable impacts, if any, cannot be mitigated; the County will also adopt a statement of overriding considerations, describing the benefits of the project that outweigh its environmental impacts. Finally, the County will adopt a mitigation monitoring and reporting plan that describes how it will ensure the mitigation measures required of the project will be carried out.

If the project is denied, no additional CEQA action is required of the County.

1.5 References Cited

1.5.1 Printed References

County of Merced. 2012. *2030 Merced County General Plan Update: Draft Program Environmental Impact Report*. November. Merced, CA. Prepared by the County of Merced in consultation with Environmental Planning Partners, Inc.

County of Merced. 2013a. *2030 Merced County General Plan*. December. Merced, CA. Prepared by Merced County.

County of Merced. 2013b. *2030 Merced County General Plan Update: Final Program Environmental Impact Report*. October. Merced, CA. Prepared by the County of Merced in consultation with Environmental Planning Partners, Inc.

County of Merced. 2007. *Draft Environmental Impact Report for the Villages of Laguna San Luis Community Plan*. July. Merced, CA. Prepared by EDAW.

County of Merced. 2008a. *The Villages of Lagune San Luis Community Plan*. September. Merced, CA. Prepared by Natural Resource Strategic Services

County of Merced. 2008b. *Final Environmental Impact Report for the Villages of Laguna San Luis Community Plan*. March. Merced, CA. Prepared by EDAW.

2.1 Project Setting

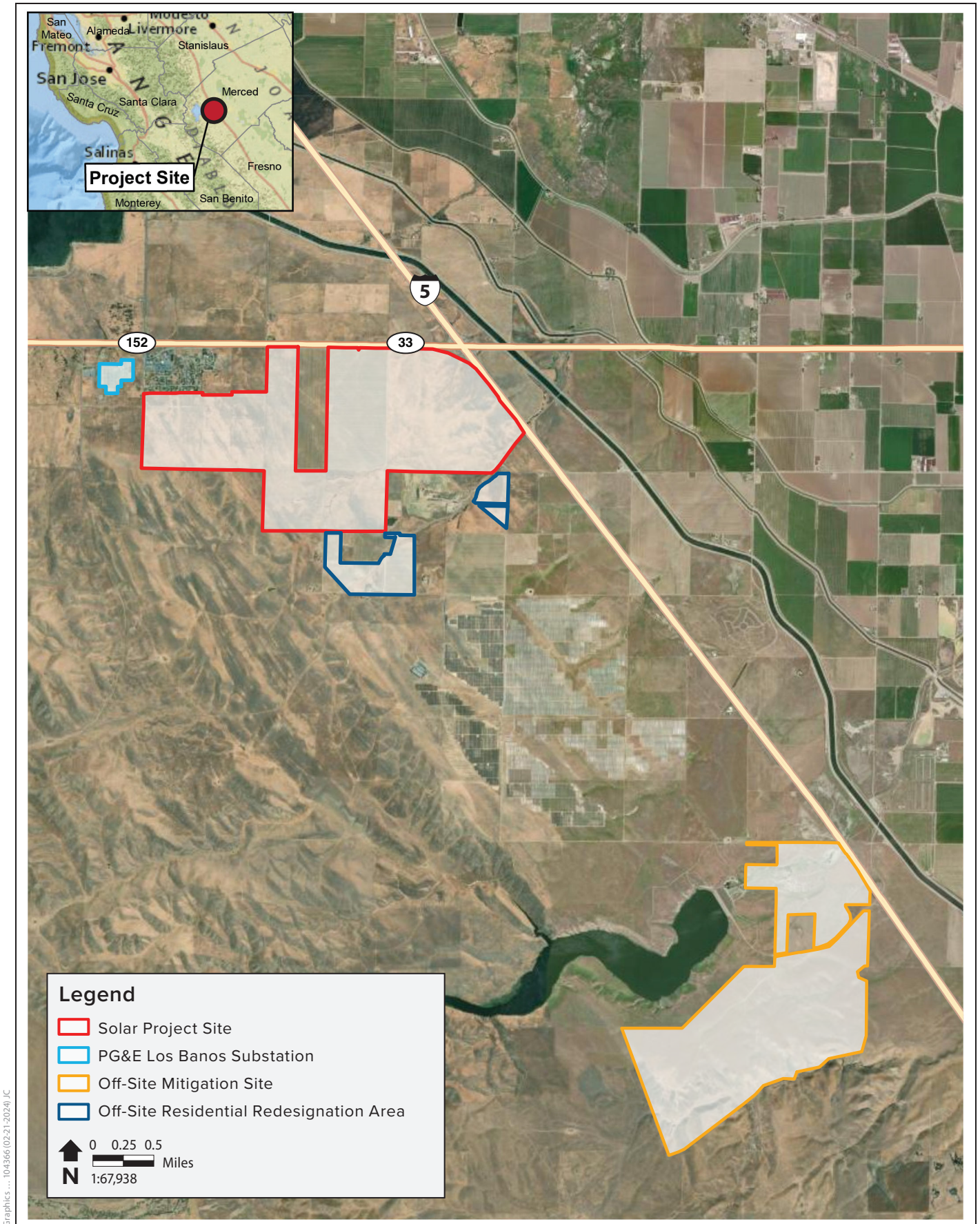
The Las Camas Solar Project (project or proposed project) would be located in western Merced County at the southwest corner of the intersection of State Route (SR) 33/152 and Interstate 5 (see Figure 2-1). The project consists of the proposed Las Camas solar facility (solar project), located on roughly 1,741 acres of undeveloped, privately owned land (solar project site), and improvements to Pacific Gas and Electric Company's (PG&E) Los Banos substation (PG&E substation improvements), located approximately 0.2 mile west of the solar project site. The project would also include construction of a 230-kV transmission line (gen-tie line) to connect the solar project to the PG&E substation. The areas comprising the solar project site, gen-tie line, and PG&E substation are collectively referred to as the "project site" in this subsequent environmental impact report (SEIR). Portions of the project site are within the Villages of San Luis Community Plan, slated for future residential development. The project would include redesignation of residential densities within portions of the Community Plan for the lifetime of the project (approximately 202.8 acres).

The solar project site is comprised predominantly of undeveloped, non-native annual grassland, with a topography that is mostly flat or gently rolling at an average slope of 4.9 percent. Elevation on the solar project site ranges from approximately 220 feet above sea level at the lowest point to 558 feet at the highest point. Steeper slopes are clustered near the southwest corner of the site and along a riverine feature in the southern portion of the solar project site. Three 230-kilovolt (kV) transmission lines and a 69-kV transmission line run north-south through the solar project site and intersect at the western corner of the solar project site. Otherwise, the solar project site has no distinguishing constructed or human-made features.

Four underground utility easements cross the eastern portion of the solar project site and one transmission line easement crosses the southwestern portion of the site. A San Luis Water District (SLWD) water line and corresponding 70-foot-wide easement also crosses through the western portion of the solar project site. A 70-foot-wide access easement for the Merced County Regional Waste Authority (RWA), which owns the Billy Wright Landfill to the south, traverses the solar project site from north to south (see Figure 2-2).

PG&E's Los Banos substation is located approximately 0.2 mile west of the solar project site. The substation equipment is located within a footprint of approximately 47 acres within the substation fence. The area within the existing fence line is occupied by existing substation equipment and is mostly paved. The area outside the existing fence line within the substation property is vacant.

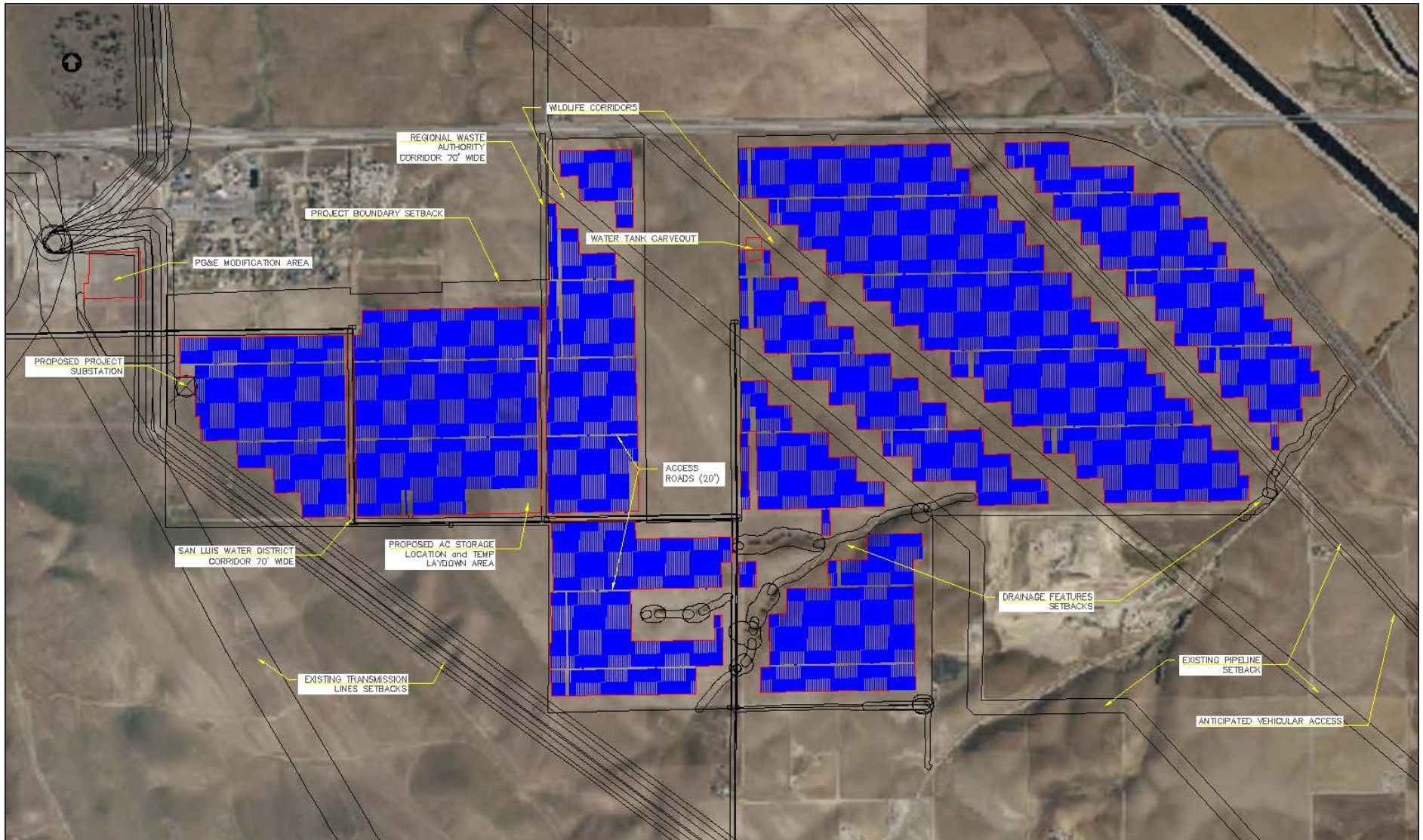
The area is rural in character. There is a residential development, recreational vehicle (RV) park, commercial area, and power substation at the junction of SR 152 and SR 33 north of the solar project site and east of the PG&E substation. Single-family residences abut the solar project site's northern boundary. The Billy Wright Landfill is adjacent to the solar project site, south of Billy Wright Road. The San Luis Reservoir State Recreation Area is located further west. The lands immediately east of Interstate 5 support orchards, grazing, and dry farming, as well as the aqueducts of the Central Valley Project (CVP). Further east, irrigated agriculture is the primary land use. The unincorporated community of Santa Nella, to the north, and the City of Los Banos, to the east, are several miles from the solar project site.



Graphics ... 104366 (02/21/2024) JC



Figure 2-1
Project Location



Note: Project has a sunset date of 2060

Source: EDP Renewables, 2024.

ICF Graphics ... 104366 (02-21-2024) / C



Figure 2-2
Proposed Solar Project Site Plan
(AC Option)

2.1.1 Location

The 1,741-acre solar project site is located approximately 3 miles southeast of the unincorporated community of Santa Nella, California, 6 miles west of the City of Los Banos, and approximately 30 miles southwest of the City of Merced. The solar project site is at the southwest corner of the intersection of SR 133/152 and Interstate 5 and can be accessed via Billy Wright Road off SR33/152. The solar project site includes the following Assessor's Parcel Numbers (APNs): 078-160-012, 078-160-013, 078-160-047, 078-160-056, 078-160-060, 078-172-001, 078-190-004, and 078-190-005, excluding a portion of APN 078-172-001. The PG&E substation is located approximately 0.2 mile west of the solar project site (APN 078-160-030) and would be connected to the solar project through a gen-tie line (APNs 078-160-030 and 078-160-047). The off-site residential redesignation area is south of the solar project site (APNs 078-190-008, 078-190-027, 078-190-028, and portions of APNs 078-190-011, 078-190-013, 078-200-006, and 078-200-088). The off-site mitigation site is located 5 miles south of the solar project site (APNs 088-040-012, 088-040-014, 088-090-001, 088-070-092, and 088-070-052). Figure 2-1 shows the project vicinity, the solar project site boundary, and the location of the PG&E substation.

2.1.2 Existing Conditions and Land Uses

The solar project site includes land designated as Urban Community (approximately 1,180 acres) and Agricultural (approximately 561 acres) in the *2030 Merced County General Plan* (Merced County 2013). See Figure 3.11-2 in Section 3.11, *Land Use and Planning*. The Urban Community designation is associated with the *Villages of Laguna San Luis Community Plan* (Merced County 2008) and includes the land use designations within the solar project site as shown in Table 2-1 below. The Community Plan land use designations are shown in Figure 3.11-3 in Section 3.11, *Land Use and Planning*. Table 2-1 also shows the corresponding zoning designations on the solar project site under the Merced County Zoning Code. The zoning designations are shown in Figure 3.11-4 in Section 3.11, *Land Use and Planning*.

The 202.8-acre residential redesignation area comprises low-density residential land uses and R-1-5000 (Single-Family Residential 5000 Feet) zoning, as shown in Table 2-2. Approximately two single-family residences are located within the residential redesignation area, and approximately four single-family residences are located adjacent to the residential redesignation area.

Table 2-1. Existing Land Use Designations and Zoning on the Solar Project Site

Land Use Designation/Zoning	Acres
<i>General Plan Land Use/Community Plan Designation</i>	
Low Density Residential (LD)	611
Medium Density Residential (MD)	257
High Density Residential (HD)	12
Community Park (CP)	24
Neighborhood Commercial (NC)	5
Village Center (VC)	49
Institutional (I)	11
Business Park (BP)	55
Open Space (OS)	70

Land Use Designation/Zoning	Acres
Urban Reserve (UR)	1
Village Center Parks (VCP)	2
Undesignated (roadways)	83
Subtotal in Community Plan	1,180
Agricultural (A) (not in Community Plan)	561
TOTAL	1,741
<i>Zoning</i>	
R-1-5000 (Single-Family Residential 5000 Feet)	715
R-3 (Multi-Family)	259
R-4 (Multi-Family)	11
C-2 (General Commercial)	72
M-1 (Light Manufacturing)	67
A-2 (Exclusive Agricultural)	51
C-1 (Neighborhood Commercial)	5
Subtotal in Community Plan	1,180
A-1 (General Agricultural) (not in Community Plan)	28
H-I-C (Highway Interchange Center) (not in Community Plan)	533
TOTAL	1,741

Note: totals may not add due to rounding.

Table 2-2. Existing Land Use Designations and Zoning on the Residential Redesignation Area

Land Use Designation/Zoning	Acres
<i>General Plan Land Use/Community Plan Designation</i>	
Low-Density Residential (LD)	202.8
TOTAL	202.8
<i>Zoning</i>	
R-1-5000 (Single-Family Residential, 5,000 Feet)	202.8
TOTAL	202.8

The solar project site occupies approximately 1,741 acres, of which approximately 1,511 acres are Farmland of Local Importance (87 percent) and 225 acres are designated Grazing Land (13 percent) by the State Department of Conservation's Farmland Mapping and Monitoring Program (FMMP). The residential redesignation area includes approximately 167 acres of Farmland of Local Importance (82 percent) and 36 acres of Grazing Land (18 percent). None of the parcels on the solar project site or the residential resignation area are under Williamson Act contract.

The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming. There are approximately 53 trees on the solar project site, consisting of non-native eucalyptus primarily concentrated around the southern portion of the solar project site, and one cottonwood located on the north-western boundary of the site.

2.2 Project Objectives

Section 15124(b) of the CEQA Guidelines requires that a project description contain a clear statement of the project objectives, including the underlying purpose of the project. The underlying purpose of the project is to supply renewable solar -sourced electricity at a competitive price. The project applicant is proposing to construct the project to meet the following objectives:

- Provide an energy storage system of up to 100 MW AC or DC battery storage capacity.
- Reduce environmental impacts by siting the project adjacent to existing powerline infrastructure.
- Develop a project that can provide renewable-sourced solar energy at a competitive price.
- Assist the State of California in complying with Senate Bill (SB) 100 (California Renewables Portfolio Standard Program) and California utilities in meeting their obligations under California's Renewables Portfolio Standard (RPS) Program to have 100 percent zero-carbon and eligible renewable resources by 2045 to help fulfill federal, state, and county renewable energy mandates.
- Support the efforts of Merced County and the State of California to reduce greenhouse gas (GHG) emissions consistent with the timeline established by California Senate Bill (SB) 32, the Global Warming Solutions Act of 2016.
- Further the goals of AB 1279, the California Climate Crisis Act, to achieve net zero greenhouse gas emissions no later than 2045, and SB 1020, the Clean Energy, Jobs, and Affordability Act of 2022, requiring that eligible renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by 2035.
- Support the energy goals stated in the 2030 Merced County General Plan, as well as other policies in the plan designed to protect Merced County's environment and economy.
- Generate clean, reliable electricity and provide long-term property tax revenue that would support public services and create jobs within Merced County and in California, while also providing direct revenue to Merced County landowners.
- Maintain the total high-density/medium-density residential development capacity in Merced County, ensuring that the County is able to meet its Regional Housing Needs Assessment (RHNA) allocation in accordance with the County's Housing Element and State law (Government Code Section 65580 (et seq.)).
- Maintain the area for future use as an agricultural use or as designated in the Community Plan through creation of a Solar Facility Overlay Zone to allow interim use of a solar project for the 35-year life of the project.
- Provide and maintain adequate habitat for regulated species such as the San Joaquin kit fox.

2.3 Project Overview

EDPR CA Solar Park III LLC (project applicant) proposes to develop, own, and operate a 200-megawatt (MW) alternating current (AC) ground-mounted solar photovoltaic (PV) power plant located on vacant lands in unincorporated Merced County, California. The applicant has filed applications for a Conditional Use Permit (CUP) (CUP Application No. 20-011), General Plan Amendment (General Plan Amendment Application No. 20-001), Zone Change (Zone Change Application No. ZC 21-002), and Solar Benefits Agreement with Merced County to allow for the construction, operation, and maintenance of

the proposed solar project within a Solar Facility Overlay, which entails the long-term generation of clean renewable energy from solar power. The energy generated by the solar project could be sold to public utilities, municipal utilities, or large private consumers of power. The power generated by the solar project would be interconnected to existing PG&E power grid infrastructure for delivery to the purchaser of the power. The proposed solar project is anticipated to be operational in 2025 and would have an operational lifespan of approximately 35 years.

2.3.1 Site Acreage

The solar project would be developed on multiple parcels of land composing the solar project site, as shown in Table 2-3. As indicated in Table 2-3 footnote “a,” a portion of APN -078-172-001 is excluded from the solar project site. Temporary and permanent disturbance acreages are presented in Table 2-4. The proposed solar project would develop 48.51 acres out of 1,741 acres, or approximately 2.8 percent of the total solar project site, with the on-site facilities described below under Section 2.3.2 (see Figure 2-2). In addition, approximately 1,229 acres within the solar project site would be temporarily disturbed during solar project construction, including temporary staging and laydown areas. The PG&E substation improvements would result in a permanent ground disturbance of approximately 10.3 acres located adjacent to the southwest corner of the PG&E substation (see Figure 2-3). Approximately 0.01 acre would be permanently disturbed to construct a 230-kV transmission gen-tie line to connect the solar project to the PG&E substation. Construction equipment for the PG&E substation improvements would be staged within the existing substation footprint or the area subject to the improvements and would not require additional temporary ground disturbance outside of the improvement area.

Table 2-3. Associated Parcels and Parcel Sizes in the Solar Project Site

Assessor’s Parcel Number (APN)	Parcel Size (acres, approximate)
078-160-012—AKT Investors/Antioch Aviation	276.63
078-160-013—AKT Investors/Antioch Aviation	38.26
078-160-047—I-5 City LLC	292.08
078-160-056—AKT Investors	100.60
078-160-060—Mangini 1998 Trust	160.99
078-172-001 ^a —Brian C. Vail	560.60
078-190-004—Mangini 1998 Trust	156.52
078-190-005—Mangini 1998 Trust	154.67
Total	1740.34

^a. A portion of APN -078-172-001 is excluded from the solar project site.

Table 2-4. Temporary and Permanent Ground Disturbance Acreages

Type	Quantity (acres)
Temporary ground disturbance within solar project site	1,228.60
Permanent ground disturbance within solar project site	48.51
Permanent ground disturbance outside solar project site	10.31 ^a
Total Ground Disturbance	1,287.42

^a Includes 10.3 acres associated with PG&E substation improvements and 0.01 acre associated with gen-tie line

Construction equipment for the project gen-tie line would be staged within the solar project site. Total disturbance during construction would be approximately 1,287 acres (rounded from 1,287.42, as shown in Table 2-4; per Table 2-3 footnote “a,” a portion of APN -078-172-001 is excluded from the solar project site), including both temporary and permanent disturbances.

As discussed in Section 2.3.6, *Land Use Redesignations and Rezoning*, no construction is proposed within the residential redesignation area. Therefore, no temporary or permanent ground disturbance would occur.

2.3.2 Proposed Solar Project

The proposed 200-MW AC ground-mounted solar project components would include access roads, solar PV panels, single-axis trackers, direct current (DC) to AC power collection wires and electrical inverters, lithium-ion batteries in either a DC-coupled battery energy storage system (BESS) system or an AC-coupled BESS system (both of which are evaluated in this SEIR and are referred to as the DC Option and the AC Option, respectively), battery enclosures, a solar project substation, a 230-kV gen-tie line, and a supervisory control and data acquisition (SCADA) system. The battery storage system would have a storage capacity of up to 100 MW. Approximately 55 solar PV inverters would be distributed among the solar arrays throughout the 1,741-acre solar project site. Figure 2-3 includes a proposed site plan for the AC Option. The components and layouts of the AC Option and DC Option would be substantially similar. Where there are differences, those differences are described below. Unless a discussion specifies that it is specific to the AC Option or DC Option, it should be assumed to apply to both options.

Mechanical Components within the Solar Field

The solar project would install 440-watt and/or 550-watt (or similar) bi-facial solar PV modules. To support the PV panels, the solar project would utilize a single-axis tracking system on steel supports, designed to mount the panels approximately 5 feet off the ground and optimize power production of the panels by ensuring proper orientation to the sun throughout the day and seasons. The solar modules would reach a maximum height of 13 feet from the ground.

Figure 2-4 shows a typical single-axis tracking system. The single-axis tracking systems are supported by metal piers driven into the ground by a pile-driving machine. The pile-driving machine used would be similar to those used on highway construction jobs to drive guardrail piers. Pier placement begins with a precise surveyed layout, ensuring proper positioning of remaining tracker assembly parts. Affixed to the top of each pier is a pier cap and bearing assembly that supports and allows proper movement of the torque tube assembly. The torque tube assembly serves two purposes: to provide an attachment point for the panels, and to move through the range of positions needed to optimize panel production. Single-axis tracking systems require a drive system that provides directional force to the torque tube. This can be accomplished with either a mechanical or hydraulic drive arm and tube assembly that “pushes and pulls” the torque arm through its range of motion or by a geared assembly that redirects rotational force to the tubes. Both approaches require a small geared motor or hydraulic system mounted on a pile support or pad strong enough to move the system through its daily range of motions.

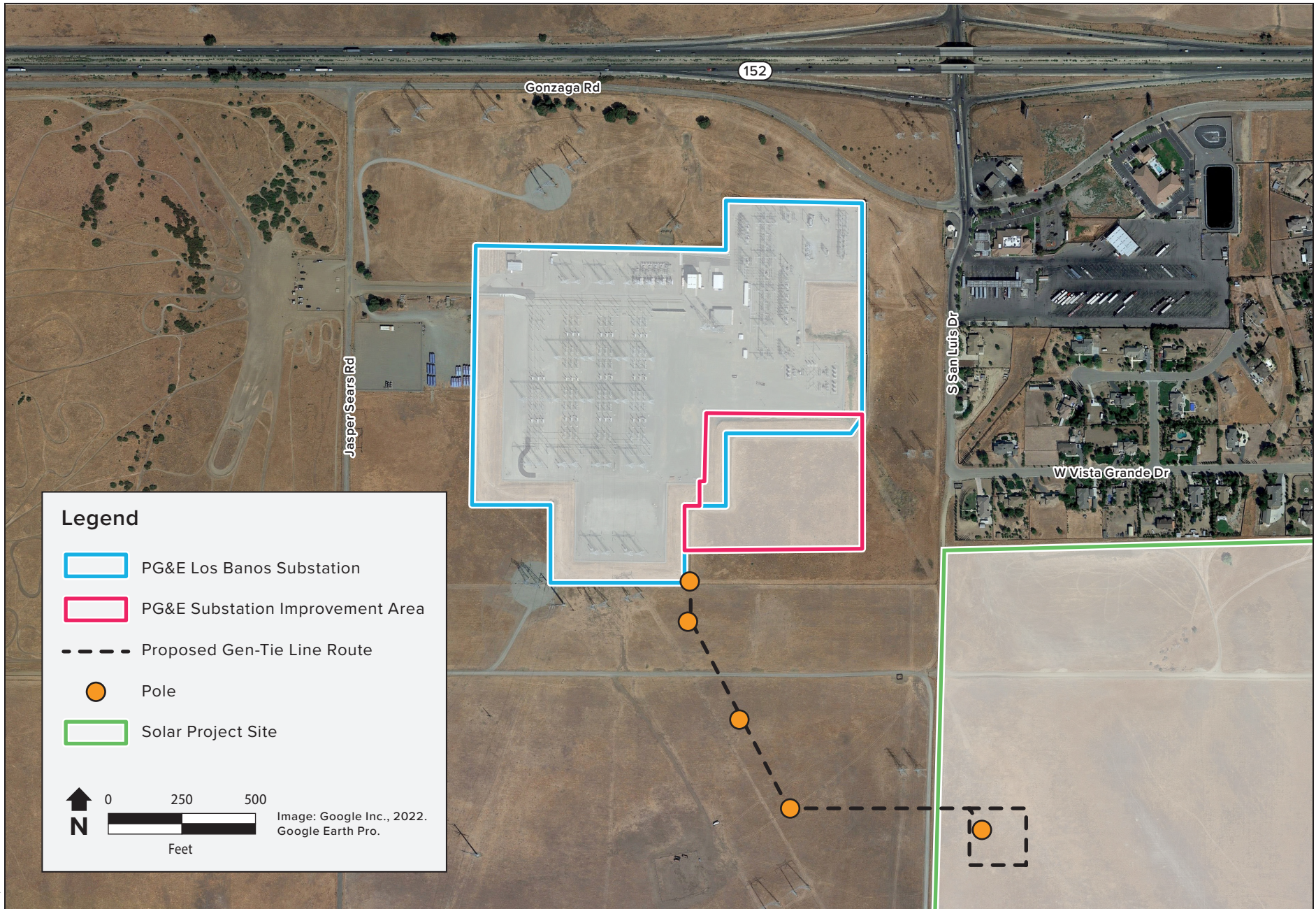


Figure 2-3
Proposed PG&E Substation Improvement Area



Figure 2-4. Typical Single-Axis Tracking System

The panels are expected to be constructed of bifacial modules. The panels would be dark blue or black in color with minimal light reflection. The PV modules could potentially utilize cadmium telluride (CdTe) thin film technology. CdTe is generally bound to a glass sheet by a vapor transport deposition during the manufacturing process, followed by sealing the CdTe layer with a laminate material and then encapsulating it in a second glass sheet.

The PV panels would be self-contained durably constructed units designed to withstand exposure to the elements for a period of 35 years or more. The solar modules deployed for use in the solar project would be certified to comply with all industry standard quality testing. Panels would be electrically connected to the grounding system of the power plant in accordance with local and state codes and regulations. The final panel selection would be determined at the detailed project-engineering phase.

Tracker design varies by manufacturer, but generally consists of a series of tracker panel rows with a drivetrain system usually located in the center of the system, dividing the tracker into two sides. The number of rows within a tracker block is a measure of desired output from the tracker. It is limited by the drive system's ability to move multiple torque tube assemblies. This row design is also determined by the desired solar output to the inverters.

As part of the tracker system, a controller is needed to provide the information to track the system throughout the day and keep the panels' orientation as perpendicular to the sun's rays as possible. This is accomplished by either operating the motor driving the system or making the motor dormant, as the motor does not turn continuously. The controller accounts for daily and seasonal changes in the sun's position. The controller also is used to position the tracker during off-production periods, such as the nightly stow period and for maintenance. In the event of a serious weather event, the system would move the tracker to the safest position to avoid damage.

Multiple tracker systems are deployed within proximity to the power conditioning system (PCS) where the DC produced by the panels is converted to AC for movement to the solar project substation and eventual delivery to the electric grid.¹ The number of trackers connected to the PCS varies with panel output relative to inverter size and desired output from the PCS.

¹ The PCS refers to the general class of devices that use power electronics technologies to convert electric power from one form to another—for example, converting between DC and AC.

Tracker layout is also constrained by the need to access the interior rows of the trackers by maintenance and emergency personnel. The solar project's trackers would be separated by distances that would accommodate maintenance personnel traveling in trucks or other maintenance vehicles. The preliminary design specifies that the distance between rows of the trackers would be up to 15 feet. This design would accommodate fire equipment access and a typical hose length of 150 feet.²

Electrical Components in the Solar Field

Direct Current (DC) Collection System

DC electricity is collected from the panels through a DC collection system and sent to the PCS (i.e., inverters). Panels attached to the tracking system are first grouped into a series circuit. Each tracker consists of a number of circuits determined by optimized individual panel output for total tracker performance. Circuits are collected in parallel through tracker electrical harnesses that travel through the cable trays to combiner boxes. Depending on the manufacturer, there may be a fuse in the linkages of the harness creating the first point of overcurrent protection in the system. The number of combiner boxes varies with final tracker design and can be sized to accommodate electrical design. Combiner boxes combine multiple parallel harnesses through a fused bus system to collect the energy into one set of DC collection cables. The fuses within the combiner boxes create another line of protection from overcurrent. The cables run from the combiner boxes to the PCS. The solar project's tracker would supply the positive and negative DC cables from each of its combiner boxes to the PCS, thereby resulting in multiple cables which are a product of the number of combiner boxes in the tracker. These cables would terminate in the DC side of the PCS inverter.

Power Conditioning System and Inverters

A PCS consists of power inverters, a medium voltage transformer, and the auxiliary power system for the trackers, and will be distributed throughout the solar arrays. Approximately 55 solar PV inverters would be distributed among the solar arrays throughout the 1,741-acre solar project site. Figure 2-5 shows a typical power inverter that may be used for the project (or similar).

Each PCS collects DC power from the tracker combiner boxes. From the tracker to the PCS, the DC cables are directly buried to a depth of approximately 48 inches. At the PCS, the DC power cables originating from the trackers are terminated on the DC side of the power inverter. Under the DC Option (described in more detail under *Energy Storage*, below), there would be 43 "DC BESS equipment areas," which would be co-located with up to 43 solar PV inverters. One DC BESS equipment area would consist of one DC-DC converter and one DC BESS enclosure. DC BESS equipment areas would generally be co-located on a one-to-one basis with the solar PV inverters but may be co-located at up to a three-to-one ratio at some locations. Each BESS enclosure would have a door-mounted cooling system with approximately four small HVAC units.

² Per the Merced County Fire Marshal, Merced County Fire Department hoses are generally 150 feet in length, but can be extended in some situations. However, dead-end rows should not exceed 200 feet in length, and rows with access on both ends should not exceed 300 feet in length. Design of the rows is subject to further review by the California Department of Forestry and Fire Protection and the Merced County Fire Department.



Figure 2-5. Power Gate Plus 1 Megawatt Solar PV Inverter

Under the AC Option, solar PV inverters would be distributed throughout the solar project site, and AC inverters and BESS enclosures would be located near the western central portion of the solar project site between to the SLWD and RWA corridors (refer to Figure 2-2). Specifically, an estimated 154 BESS enclosures and 26 AC inverters would be located in the AC storage area, and 55 solar PV inverters would be distributed throughout the solar project site. The inverter converts the DC power from the panels into three-phase AC power for movement across the solar project site to the high voltage solar project substation (which would include a main step-up transformer and equipment HVAC unit). The combined quantity of inverters creates the AC rating for the PCS. The AC rating for the PCS is expected to be 2 to 4 MW.

The PCS provides another point of power routing back to the control boxes and motors that run the tracking system. This source of auxiliary power is critical to the primary operation of the tracker systems and can be fed to the system even when solar irradiance is inadequate to generate power from the solar panels.

Medium Voltage Collection System

Once power has been converted to AC, it can be effectively moved longer distances by transforming the power (varying the voltage) through medium voltage transformers (MVTs). Each PCS would have one MVT that would step up the voltage of the electrical power to 34.5 kV for movement along the medium voltage collection system. Each MVT would have a fuse system for each of the three phases transformed for the medium voltage collection system (MVCS), offering another level of protection from overcurrent.

The power that exits the MVT travels in directly buried cables. These cables are buried a minimum of 36 inches below finished grade and may be spliced above ground in clearly marked junction boxes. The MVCS travels between the MVTs found on each PCS, adding power in parallel until the quantities reached are optimized for a given MVCS circuit. The initial design for the solar project assumes that 13–15 MW of power would be carried by one circuit; however, this will depend on the length of the directly buried cable, and what amount of line loss would be considered acceptable for the system.

All circuits of the MVCS would be routed across the solar project site to the solar project substation. The MVCS would then be collected into the substation through a series of circuit breakers and into the low power side of the electrical bus system of the substation.

Electrical Components in the High Voltage Systems

Solar Project Substation

The solar project substation is the portion of the system where solar project power is transformed to match the specification of the interconnection into the electric grid. The main purpose of the substation is to step up the voltage of the electricity generated by the solar PV panels to match the interconnection voltage through the use of a step-up transformer. The solar project substation is characterized as having a low side and a high side, as defined by the point of power transformation from 34.5 kV (low side) stepped up in voltage to match the grid specifications in the transmission system (high side). The power would be stepped up to 230 kV at the solar project substation. The solar project substation would be located along the western perimeter of the solar project site approximately 1,000 feet south of the northern property line (see Figure 2-2). The footprint of the substation would be approximately 1.7 acres.

The low side of the substation is composed of the MVCS terminations into a low side bus. This power is fed through automated circuit breakers that can be controlled remotely from a control room or can automatically open the circuit if a phase fault is detected anywhere in the portion of the solar field routed through that circuit breaker.

The low side bus is tied directly to a step up transformer (SUT) where the power goes through the voltage transformation. The solar project would utilize an SUT to provide redundancy and protection in the system, should a failure occur at one of the SUTs.

Within the low side and high side of the substation bus work, there are several points where switches would be installed. By manually operating these switches and locking them out for safety, portions of the substation could be electrically isolated. Substation design related to breakers and switches would comply with all relevant interconnection codes and requirements.

Additionally, the solar project substation would include a control room with an environmental enclosure housing the relay switches and the electrical control gear. Figure 2-6 shows a typical control room. The control room would be the base of operations for the entire solar facility, not just the substation, and provides for external communication. The solar project's control room would be powered by lower voltage power produced by the solar project through the SUT or the local supply grid.



Figure 2-6. Typical Control Room

Note: Photo courtesy of Intermountain Electric

Project Transmission Line

The project would include a 230-kV electric transmission line (gen-tie line) to connect the solar project to generation facilities owned and operated by PG&E at the Los Banos Substation, located west of the solar project site. The gen-tie line would be composed of a span of 3 conductors between the solar project substation dead end structures and the PG&E substation dead end structures. The line would be up to 0.4 mile long, and would include five tubular steel poles reaching a height of approximately 100 feet. The sizing of the conductor would be relative to the exact length of the span necessary for the project and the avoidance of calculated line losses. The dead end structures on both sides of the facilities would also carry a fiber communications system between the control rooms of the facilities.

Point of Interconnection

The project's point of interconnection (POI) is the point at which the solar project's electricity would be delivered to the electrical grid. The project's POI would be PG&E's Los Banos Substation, with 200 MWac connecting at the 230-kV gen-tie line. The project holds two positions in the California Independent System Operator (CAISO) interconnection queue and has been studied for delivery of the full 200 MWac of generation. The project applicant has signed an Interconnection Agreement with CAISO and PG&E that would allow for the interconnection of the full 200 MWac capacity to the grid before the solar project is fully operational.

Power Back Feed Requirements

The solar project would require power to operate during periods when solar irradiance is too low for energy production from the solar panels. This would occur at night (including early morning and evenings), maintenance periods, and occasional plant outages related to low side failures. Back feed is accomplished directly through the high voltage system from the POI. All breakers and transformers work in the opposite direction, allowing the appropriate power levels to be fed into the system. Back feed power is controlled at the inverters so that solar field components are not damaged.

Emergency Generator

The project applicant anticipates that emergency backup power for the solar project would be provided by connecting the solar project substation to a residential feed. However, if this is not possible, backup power would be provided by a 25- to 50-kW diesel backup generator. This SEIR evaluates the potential environmental impacts that could result from operation of such a generator to account for this potential project feature.

Communications and Metering

Supervisory Control and Data Acquisition

A Supervisory Control and Data Acquisition (SCADA) system would be installed to provide plant visibility and control of the solar field and all components of the electrical system to the plant and grid operators. Physically, the system would be installed with a series of fiber communication lines connecting points (i.e., an item to be monitored) of the electrical system to the control room of the substation, where the fiber would be terminated at servers of the operating system. Fiber is also run from all the high voltage components that require monitoring, such as the breakers within the substation. This SCADA system is used to remotely operate breakers within the substation and is integral to the safe operation of the substation.

Energy Storage

As part of the solar project, BESS would be constructed within the solar facility to provide dispatchable energy under various operating conditions. At this time, it is anticipated that these would be Tesla Megapack units. Tesla Megapack units are approximately 30 feet wide, over 5 feet deep and over 8 feet tall. The ability to store energy would improve the solar project's operability and enhance the integration of as-available solar-generated energy resources into the transmission network by offering additional ramp rate control and more consistent energy flows. Two battery system configurations are being considered: a DC-coupled system (DC Option) and an AC-coupled system (AC Option). Both options are evaluated in this SEIR. The battery storage system would have a storage capacity of up to 100 MW.

Under the DC Option, lithium-ion batteries that store electricity would be distributed throughout the solar arrays and would share the solar collection wires and electrical converters. The batteries would be housed in BESS that are co-located with up to 43 solar PV inverters at evenly distributed DC BESS equipment areas throughout the solar project site, as discussed above under *Power Conditioning System and Inverters*. The 43 DC BESS equipment areas under the DC Option would be approximately four feet wide, three feet long, and seven feet tall.

Under the AC Option, lithium-ion batteries that store electricity would be aggregated within a single 8-foot by 50-foot BESS at the AC alternative storage area near the western central portion of the solar project site, between the SLWD and RWA corridors (see Figure 2-2).

Under either scenario, the BESS would be temperature-controlled and equipped with fire suppression and electrical control systems.

Lithium Ion

Technology Description

The lithium ion (Li-ion) battery is a rechargeable battery where the negative electrode (anode) and positive electrode (cathode) materials serve as a host for the lithium ion (Li⁺). Lithium ions move from the anode to the cathode during discharge and are intercalated into (i.e., inserted into voids in the crystallographic structure of) the cathode. This is illustrated graphically by Note: Photo courtesy of Frontier Renewables Figure 2-7. The ions reverse direction during charging. Because lithium ions are intercalated into host materials during charge or discharge, there is no free lithium metal within a Li-ion cell. In a Li-ion cell, alternating layers of anode and cathode are separated by a porous film (separator). An electrolyte composed of an organic solvent and dissolved lithium salt provides the media for Li-ion transport. For most commercial Li-ion cells, the voltage range is approximately 3.0 volts (V) (discharged or 0 % state-of-charge [SOC]) to 4.2 V (fully charged or 100% SOC). (Portable Rechargeable Battery Association n.d.)

Components of Li-Ion Energy Storage System

Each Li-ion battery cell is wired series/parallel in order to increase the voltage and amp hours into larger and larger battery blocks. The battery blocks, in turn, are wired into larger modules to increase voltage and amp hours. The battery modules are housed in a standard 40-ft shipping container that is self-contained and self-sufficient to charge, store, and discharge energy. The energy storage modules can also be wired in series/parallel to increase voltage and discharge duration. For an application of this project's size, the battery modules are usually rated to 250 kW/250 kWh. The general arrangement of the battery storage module is depicted below in Note: (Photo courtesy of Frontier Renewables) Figure 2-8.

Power Conditioning System

The PCS (component A in Note: (Photo courtesy of Frontier Renewables) Figure 2-8) refers to the general class of devices that use power electronics technologies to convert electric power from one form to another—for example, converting between DC and AC; converting between different voltage levels; or providing specific power qualities required by the subsystems being interfaced by the PCS (National Institute of Standards and Technology 2021).

Battery Module

The battery module (component B in Note: (Photo courtesy of Frontier Renewables) Figure 2-8) contains all the cells harnessed with monitoring equipment and wired to generate the required voltages.

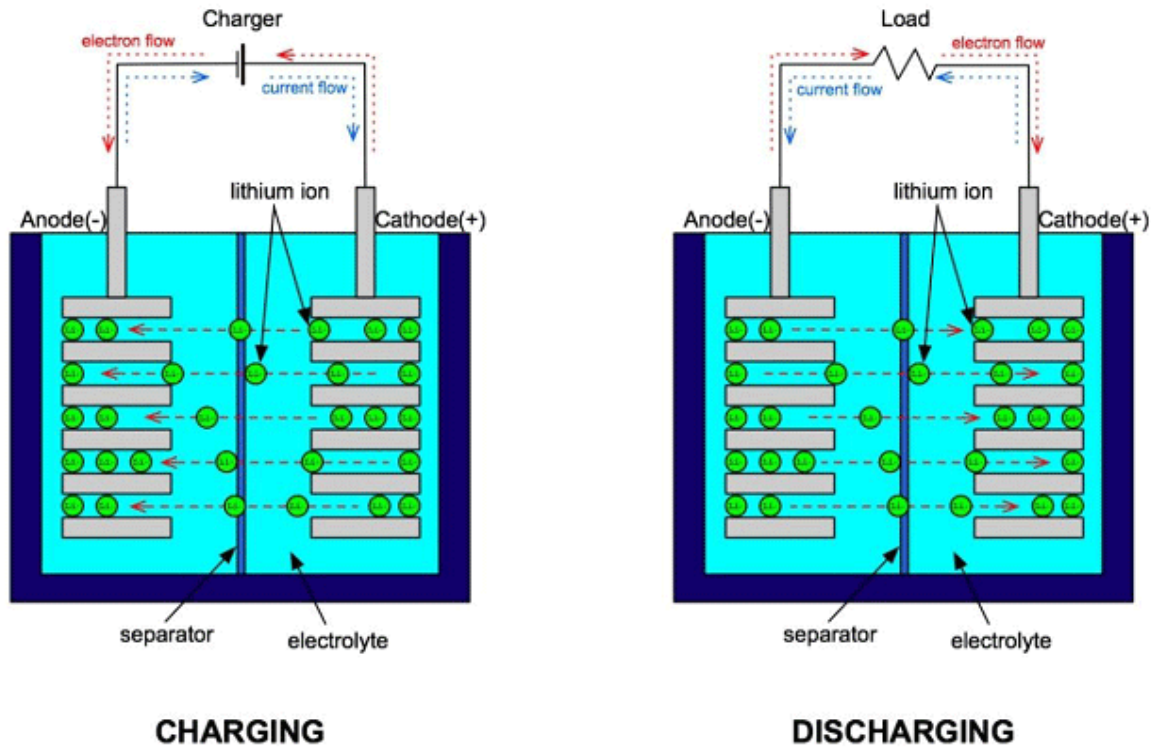


Figure 2-7. Lithium Ions Charging and Discharging

Note: Photo courtesy of Frontier Renewables

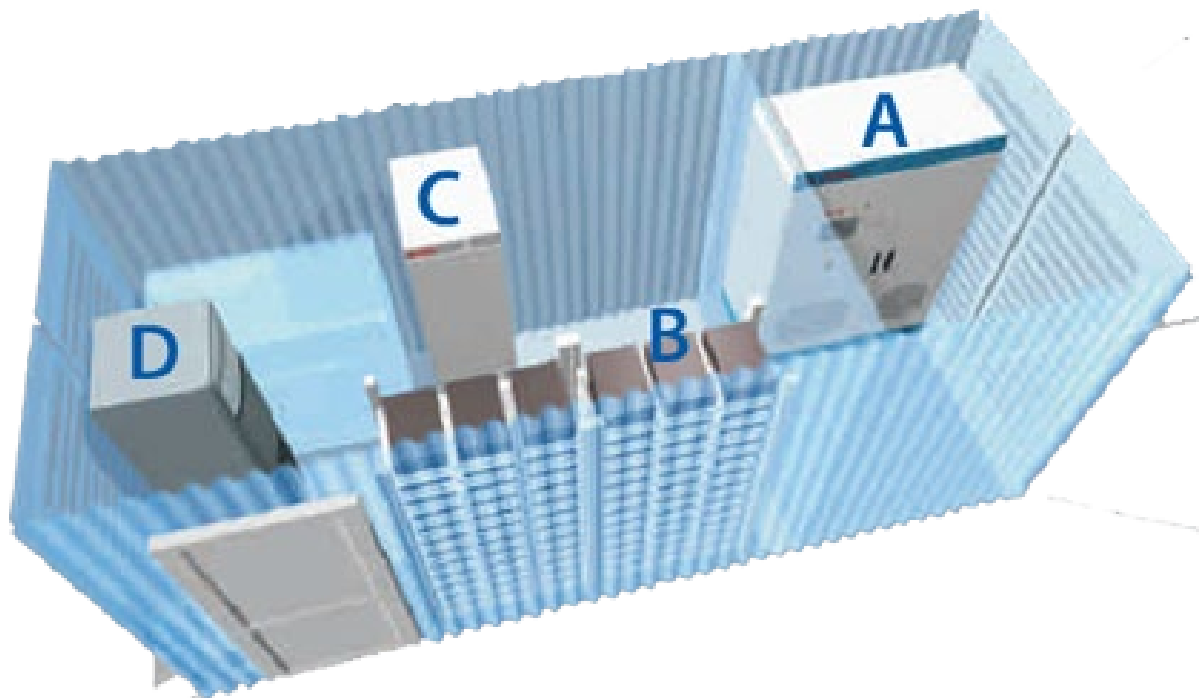


Figure 2-8. Battery Storage Module

Note: Photo courtesy of Frontier Renewables

Control Cabinet

The control cabinet (component C in Note: (Photo courtesy of Frontier Renewables) Figure 2-8) contains all the computer and monitoring components to operate the battery module and maintain safe operating conditions. This includes the battery management system (BMS) that coordinates information from the cells, contactors, current sensors and end-user inputs to continually monitor and adjust the operation of the battery system. The BMS embedded controllers include software with highly developed algorithms for diagnostic and control decisions. In addition to safety, the BMS functions as a monitor that helps to ensure a long lifespan for the battery system by monitoring for over-temperature detection, over-charge detection, over-discharge detection, current surge detection, and contractor malfunction detection among other things.

Air Conditioning and Fire Suppression System

The air conditioning and fire suppression system (not pictured) equipment is used to maintain safe ambient operating temperature conditions consistent with the fire protection strategies and safety standards provided in the *Lithium-Ion Batteries Hazard and Use Assessment* published by the National Fire Protection Association (NFPA). Fire suppression equipment would include sprinklers or flame-retardant chemical dispersants.

Safe Handling

While Li-ion batteries can be recharged time after time and contain no free lithium metal, they do contain lithium ions and highly flammable electrolytes. Li-ion batteries are capable of spontaneous ignition and subsequent explosion due to overheating. Overheating may be caused by electrical shorting, rapid discharge, overcharging, manufacturer defect, poor design, or mechanical damage, among many other causes. Overheating results in a process called thermal runaway, which is a reaction within the battery causing internal temperature and pressure to rise at a quicker rate than can be dissipated.

Once one battery cell goes into thermal runaway, it produces enough heat to cause adjacent battery cells to also go into thermal runaway. This produces a fire that repeatedly flares up as each battery cell ruptures and releases its contents. The result is the release of flammable electrolyte from the battery and, in the case of disposable lithium batteries, the release of molten burning lithium. Handling and extinguishing these types of fires requires specific training, planning, storage, and extinguishing interventions.

The amount of data relative to the fire behavior of large format batteries is limited; however, there are certain battery behavior characteristics that indicate when a battery goes into thermal runaway. The fire may be a progressive burn-off or one that is explosive in nature. Both of these types of thermal events, as well as their negative by-products (e.g., jetted shrapnel, molten metal, burning electrolytes, and other matter), can be managed and contained in the appropriate storage and transport environments (Veolia North American Corp. 2021).

The report, *Lithium-Ion Batteries Hazard and Use Assessment*, published by the Fire Protection Research Foundation of the NFPA, provides suppressant research data, limited fire test data, and other information relative to fire and safety issues in small-capacity Li-ion batteries. This research is used to identify and assess fire protection strategies for Li-ion battery storage, and NFPA safety standards are commonly used in applications such as those for the solar project.

Li-ion battery fire risks can be managed through proper planning, risk assessment, storage methods, and response protocols. The following areas will be addressed in the solar project's strategy for managing battery fire risks and emergency response.

In most cases, mechanical damage would probably rank as the highest risk factor for initiating a thermal runaway (fire/explosion) event. Improper handling can result in crush or puncture damage possibly leading to the release of electrolyte material or short-circuiting. These actions could result in thermal runaway and a resulting fire and/or explosion.

Proper battery storage and transport strategies will help manage the risks. An effective method for Li-ion battery storage is to use a fire containment and suppression system that would deal with a battery fire event. Such systems contain the fire event and encourage suppression through cooling, isolation, and containment (SCIC). It is important when using this approach to ensure batteries are housed in environments that feature fire suppression systems that extinguish through cooling. Suppressing a lithium ion (secondary) battery fire is best accomplished by cooling the burning material (Veolia North American Corp. 2021).

The solar project's battery facility would be operated in accordance with all applicable local, state, and federal requirements and manufacturer safety specifications. Personnel training would be implemented as part of the solar project to help address the unique issues this type of battery technology presents, such as battery fire behavior, emergency response procedures, and fire extinguisher use (Li-ion battery focus). In order to prepare personnel for dealing with emergency situations and comply with the Occupational Safety and Health Administration's (OSHA) Emergency Action Plan Standard, 29 Code of Federal Regulations (CFR) 1910.38 and NFPA 855, Standard for the Installation of Stationary Energy Storage Systems, an emergency action plan would be developed prior to solar project operation. This emergency action plan would be developed to effectively address all emergencies that may be reasonably expected to occur at the BESS. Such a plan may include a designated emergency coordinator who would be responsible for notification of emergency personnel, safely evacuating solar project employees and the proper use of fire extinguishers (if applicable). All personnel working onsite would receive instruction and training on the emergency action plan.

Effective battery standard operating procedures for battery use and storage would include processes that guide shipping and receiving, installation, handling, daily use, storage, and other functions involving the batteries. Proper procedures include keeping batteries from exposure to direct sunlight, high temperature, and high humidity (Massachusetts Institute of Technology 2017).

Security Fencing and Lighting

Site Security

The solar project would be remotely monitored by the project applicant or an affiliated company. The solar project site would be secured with a 6- to 10-foot-high chain link fence perimeter fence, and a second perimeter fence with lighting would secure the solar project substation. In accordance with Section 18.34.030 of the Merced County Unified Development Ordinance, a vegetated screen would be installed along the northern property line where the solar project site abuts adjacent residential uses. Manual swing gates would be constructed at the main entrance and in strategic areas, as required for access by property owners and for the convenience of utility companies in accessing and maintaining their facilities. All easements already recorded would be honored. Additional site security measures would include a monitored camera system at gates and

entry points. This system would be remotely monitored, and security breaches would be reported to emergency responders as well as site operations. Furthermore, the solar project would comply with North American Energy Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) requirements for regulatory control and security systems.

Outdoor Lighting

Solar project lighting would be installed for ongoing maintenance and security purposes. Low-level security and wayfinding lighting would also be installed at the solar project site gates. Lighting would also be installed at the solar project's substation. All solar project lighting would be used from dusk to dawn and would be shielded and directed downwards to minimize light impacts to nearby properties. Solar project lighting would conform to National Electric Safety Code (NESC) requirements and all applicable Merced County outdoor lighting codes. NESC recommends, as good practice, illuminating the solar project substation to a minimum of 22 lux or 2 footcandles.

Signage

Signs warning of high voltage danger would be posted on the array fences and at all entry points to the solar project site. These signs would also include a *no trespassing* statement. Signs posted along the solar project substation would conform to all codes and applicable safety requirements. Signage would identify the solar project operator and owner and provide emergency contact information. All signage would conform to Merced County signage requirements.

Operation and Maintenance

Operational Time Limits

Once in operation, the solar project would generate electricity during daylight hours (i.e., from dusk to dawn). Typically, the solar project would produce energy from 6:00 a.m. until 6:00 p.m.

Personnel

The solar project would be a private facility and, for safety reasons, would not be open to the public. Only authorized personnel would be permitted onsite and generally would be limited to the employees monitoring and maintaining the facility. Up to eight employees from off-site maintenance and operation facilities would visit the solar project site on a daily basis to service and maintain the arrays.

Facility Maintenance

Facility maintenance for the solar project would include the periodic maintenance of buildings, solar panels, solar components, and the internal road network. The level of vehicle activity entering and leaving the solar project site during operation would be limited to scheduled and emergency maintenance visits and infrequent delivery vehicles. Scheduled solar project maintenance would occur in the early evening or early morning hours to avoid interference with the solar project's peak hours of generation. Emergency maintenance would occur at any time, as needed for the situation; however, maintenance and emergency service during daylight hours would be encouraged to maximize worker safety. See also the "Water Demand and Storage" discussion, below.

Re-establishment of vegetation would follow construction. Noxious weeds on the solar project site would be controlled through the use of herbicides, mowing, and/or grazing. Pesticide use would not be allowed.

Panel Washing

Panel washing to remove dust particles from the solar panels would be expected to occur once every year. It is anticipated that water for panel washing would either be supplied by the SLWD through existing connections to the solar project site (Solar Water Management Agreement and Construction Management Agreement forgoing agricultural allocations on site), or pumped from the AKT irrigation well located adjacent to SR 33 at the northwest corner of AKT's Mid-Cal property, approximately 4.4 miles north of the solar project site (Mid-Cal well). Under the second option, the pumped water would be transported to the solar project site by 4,000-gallon water trucks and applied by up to four robotic sprayers. Panel washing would occur Monday-Friday for up to 20 business days over the course of a 30-day period, taking place only during daylight hours. The solar project's annual operational water demand would be approximately 5 acre-feet, or 1.6 million gallons, including panel washing and irrigation demand, discussed below (EMKO Environmental, Inc. 2023).

Waste

The solar facility is anticipated to generate a small amount of solid waste through maintenance and operation activities. Such waste would be likely to consist of rusted metal, defective PV modules, miscellaneous electrical hardware, empty supply containers, and food waste from items consumed by on-site personnel. The solar project would not include any permanent wastewater fixtures. Portable toilets would be provided for the off-site maintenance and operation personnel who would visit the solar project site to service and maintain the arrays (as discussed above, a maximum of eight personnel could visit the site per day). During operation and maintenance, waste disposal would occur consistent with applicable federal, state, and local recycling, reduction, and waste requirements and policies. Over most of the 35-year operational period, waste would be disposed of at the Billy Wright Landfill to the south of the solar project site (which is expected to reach capacity in 2054), or a combination of the Billy Wright Landfill and the Highway 59 Landfill located approximately 36 miles northeast of the solar project site (as the Highway 59 Landfill is expected to reach its permitted capacity by 2030). At this time, the County has not identified future landfills to accept County-generated waste beyond 2054.

Water Demand and Storage

In accordance with Section 18.34.030 of the Merced County Unified Development Ordinance, a vegetated screen would be installed along the northern property line where the solar project site abuts adjacent residential uses. The solar project's irrigation demand would be limited to this vegetated screen, which would be compliant with the State Model Water Efficient Landscape Ordinance (MWELO). As discussed above, the solar project's operational water demand would be approximately 5 acre-feet, or 1.6 million gallons, per year including panel washing and irrigation demand (EMKO Environmental, Inc. 2023). It is anticipated that water for irrigation and fire flow would either be supplied by the SLWD through existing connections to the solar project site, or pumped from the Mid-Cal well described above and transported to the solar project site by water trucks as discussed above. One 5,000-gallon water tank would be permanently installed in the northwest portion of the solar project site to store water for irrigation and fire flow in

accordance with Section 507.1 of the California Fire Code. Additional water tanks may be installed if required by the County Fire Department during site plan review, or if required by state law.

Site Access

Permanent access to the solar project site would be provided via a new access point at Billy Wright Road where it abuts the eastern portion of the solar project site. This access point would be reached by taking Highway 152 west out of Los Banos, and turning left onto Billy Wright Road, or by exiting I-5 onto Highway 152 and turning right onto Billy Wright Road. The access point would be on APN 078-172-001 (the easternmost parcel on the solar project site), as shown in Figure 2-2. The access and interior roads would be surface with aggregate, be dust free, and would be maintained to facilitate onsite circulation for emergency vehicles during all weather conditions. Access roads running around the arrays may include crushed aggregate, if necessary, to prevent damage to existing soils, and the arrays would sit on piling that raise them above the surface, avoiding the need for additional landscaping work. The internal road network and solar project site access are illustrated on Figure 2-2.

Wildlife Passage and Fencing Design and Habitat Conservation Plan

The solar project design incorporates multiple wildlife movement pathways through the solar project site to facilitate wildlife movement, as illustrated in Figure 2-2. Three underground utility easements and one transmission line easement would remain undeveloped and unencumbered to facilitate wildlife passage through the solar project site. The area of these easements totals approximately 92 acres. Fences installed on the perimeter of the solar project site and arrays would be designed to enable passage of kit foxes and their prey in and out of the facility, while impeding the passage of larger predators of kit foxes, such as coyotes and larger domestic dogs. All fencing would have an appropriately 4-6" sized gap between the bottom of the fence and the ground. The size of the gap will be dictated by the solar project's habitat conservation plan (HCP) and CESA Section 2081 Incidental Take Permit, subject to approval by the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), respectively. The bottom of the fence fabric would be knuckled (wrapped back to form a smooth edge) to protect wildlife that pass under the fence.

The HCP is being prepared for the solar project as part of the incidental take permit process. The HCP includes proposed avoidance and minimization measures that have been incorporated in the project to avoid or minimize the taking of covered species. Please refer to Appendix 1-1 of this SEIR for the complete list of proposed avoidance and minimization measures.

2.3.3 Proposed PG&E Substation Improvements

The proposed project includes transmission system improvements to PG&E's Los Banos Substation to connect the PG&E substation to the solar project and facilitate the delivery of power from the solar project. As shown in Figure 2-3, the existing substation fence would be moved outward to the south and east, on existing substation property, to accommodate the additional equipment required. The area within the modified fence would be graveled and encompass an additional approximately 450,000 square feet (10.3 acres) of existing PG&E-owned substation property (PG&E substation improvement area).

A new 230-kV breaker-and-a-half (BAAH) bus section and a new 230-kV enclosure would be constructed within the newly-modified substation area. New power circuit breakers, air disconnect switches, voltage transformers, control, power and communication cables, underground fiber cables and fiber terminations, yard lighting, and a ground grid would also be constructed within the substation. Outside the fenced area but also on PG&E-owned substation property, communication cables, conduit, associated IT equipment, a remote terminal unit (RTU) relay panel, meter receptacles, and a meter cabinet would be constructed. In addition, up to approximately 10 structures would be installed on substation property to support a new, 230 kV transmission line connecting the substation facilities to the adjacent solar project. Tower raises may be required on approximately four existing PG&E towers in order to allow crossing from PG&E property to the solar project.

PG&E Avoidance and Minimization Measures/Best Management Practices

PG&E implements standard avoidance and minimization measures (AMM) and best management practices (BMPs) during construction and operation of projects in its service territory. The following AMM/BMPs would be implemented to avoid and/or minimize impacts on the environment during construction and operation of the PG&E substation improvements.

- **PG&E AMM/BMP-1: Fugitive Dust Control.** The PG&E crew will not allow visible dust to pass beyond the PG&E property boundary. The crew will abate dust by:
 - Applying water to disturbed areas and to storage stockpiles;
 - Applying water in sufficient quantities to prevent dust plumes during activities such as clearing & grubbing, backfilling, trenching and other earth moving activities;
 - Limiting vehicle speed to 15 miles per hour;
 - Loading haul trucks with a freeboard (space between top of truck and load) of six inches or greater;
 - Covering the top of the haul truck load;
 - Cleaning up track-out at least daily; and
 - Not generating dust in amounts that create a nuisance to wildlife or people, particularly where sensitive receptors are located nearby or down-wind. During inactive periods (e.g., after normal working hours, weekends, and holidays), the PG&E crew will apply water or other approved material to form a visible crust on the soil and restrict vehicle access.
- **PG&E AMM/BMP-2: Portable Equipment Registration Program.** Portable engines will be registered into the Statewide Portable Equipment Registration Program (PERP) administered by the California Air Resources Board (CARB), if:
 - The engine is portable (mounted on a truck, trailer, skids, or wheels);
 - The engine is 50 brake horsepower or greater, and;
 - The engine does not provide motive force for a vehicle.

Auxiliary engines mounted on vehicles will be registered if they are 50 brake horsepower or greater. For PG&E-owned units, PG&E Environmental Operations and Transportation Services is responsible for maintaining valid PERP registration. For rental units, the rental vendor is responsible for the PERP registration. If a current registration sticker and registration paperwork is not on the unit, the crew will not use the piece of equipment and have it replaced with a unit is compliant.

Additional requirements include:

- If the PERP unit is being used to provide primary or supplemental power to a building during an electrical upgrade there is a 90-day limit on the use of PERP.
- If the PERP unit is being used to provide primary or supplemental power to a building and an electrical upgrade is not happening a local air district permit is required.
- If the PERP generator is being used for Public Safety Power Shutoffs (PSPS) support, a local air district permit will be required.
- If the PERP Unit is being used to replace a failed stationary source generator:
 - A local district notification is required within 72 hours;
 - A Tier 4 Final Engine should be used; and
 - A local district permit may be required in 180 days.
- **PG&E AMM/BMP-3: Oil-Filled Electrical Equipment.** Oil-filled electrical equipment (OFEE) will be managed in accordance with ENV-3000P-02-JA01 Job Aid: Handling In-Service Electrical Equipment from the Field.

If during the removal/replacement of OFEE, visible evidence of an oil leak is identified (e.g., seeping, weeping, staining, sheen), PG&E personnel will contact the environmental field specialist (EFS) immediately to determine cleanup actions and regulatory reporting requirements.

Work must cease on all leaking pre-July 1, 1979 equipment or equipment without a non-polychlorinated biphenyl (PCB) blue sticker or other non-PCB indicator on its nameplate until the EFS has been contacted.

All leaking equipment must be patched, pumped, or containerized in the field so that it will not leak during transport; taken straight back to the service center (i.e., stops at laydown yards are prohibited); and placed in the designated returned equipment area with a completed yellow condition tag.

For other equipment that cannot be tested, the EFS will be contacted to coordinate generation of a purchase order and contract for disposal. The equipment will be transported by a PG&E approved hazardous waste contractor and taken to a disposal facility.

- **PG&E AMM/BMP-4: Hazardous Materials Business Plan.** The EFS will be notified 30 days prior to a threshold exceeding hazardous material/waste being placed on-site. Threshold limits are: 200 cubic feet of compressed gases (1,000 cubic feet for simple asphyxiation or the release of pressure only; carbon dioxide), 500 pounds of solids, or 55 gallons of liquids for more than 30 non-consecutive days.
- **PG&E AMM/BMP-5: Hazardous Materials Storage.** The storage of hazardous materials will be managed according to regulations and best management practices.
 - All releases of hazardous materials will be immediately addressed. A spill kit will be maintained onsite during the length of the project. In the event of a spill of hazardous materials/wastes, the EFS will be contacted to determine if agency notifications will be required and/or if additional resources are needed.

- Hazardous materials greater than 440 pounds and less than 1,001 pounds can be transported on PG&E vehicles if the proper materials of trade (MOT) shipping paper/material safety data sheets (MSDS) accompany the load. PG&E personnel will contact the EFS for additional guidance in these areas.
- All hazardous materials containers will be marked correctly.
- All hazardous materials signs will be displayed as required.
- Non-saturated oily rags (to be laundered) will be stored in non-combustible containers.
- Emergency equipment such as fire extinguishers, eye wash, MSDS, etc. will be maintained on the PG&E substation site.
- Hazardous material containers will be in good condition.
- All hazardous materials will be compatible with containers.
- Hazardous materials containers will be kept closed.
- If there is an unauthorized release of hazardous material, PG&E personnel will contact the EFS immediately. If the release occurs after hours, PG&E personnel will contact the Environmental Emergency Hotline at 1-800-874-4043.
- **PG&E AMM/BMP-6: Local Environmental Field Specialist Notification.** PG&E personnel will immediately contact the environmental field specialist (EFS) and stop work if any of the following conditions occur. If the incident occurs after hours or if the EFS is unavailable, personnel will call the Environmental Emergency Hotline at 1-800-874-4043.
 - Discharge or spill of hazardous substance;
 - An environmental regulator visits the PG&E substation site;
 - Visually cloudy/muddy water is observed leaving the work area;
 - An underground storage tank is discovered; or
 - A subsurface component related to site remediation activities (e.g., monitoring well, recovery well, injection well) is discovered. No subsurface components will be impacted.
 - If during excavation unanticipated evidence of contamination is identified (e.g., staining, odors), work will cease and the trench will be covered with steel plates when safe to do so. In order to minimize impacts to public safety and the environment, contaminated soil will be placed on a polyethylene sheet (4 ml) and covered, or placed in lined covered containers. PG&E personnel will contact the EFS to determine the next steps.
 - If any subsurface components related to site remediation activities (e.g., monitoring well, recovery well, injection well) are discovered in the path of excavation, work will cease in that location and the EFS will be notified to determine the next steps. No subsurface components will be impacted.
- **PG&E AMM/BMP-7: Sulfur Hexafluoride (SF6) Gas Material/Waste Management.** Advanced Specialty Gas (ASG) provides sole-source service in supplying, replacing, removal and recycling of SF6 in all facilities. ASG provides 24-hour service in response to events involving SF6 as well as delivery and removal of all SF6 cylinders.

Before accessing any equipment that may contain SF₆ gas byproduct waste, PG&E personnel will contact their local EFS at least two weeks in advance for assistance in arranging cleanup, transportation and disposal.

- A PG&E-qualified vendor will retrieve, package, label, and transport SF₆ byproduct waste (i.e. fluorides of sulfur, metallic fluorides, etc.). All SF₆ byproduct waste that is removed must have proper shipping papers, which could include a remote waste shipping paper or a manifest (manifests require a permanent or temporary EPA ID number).
- SF₆ cylinder tracking and facility inventory shall be managed in accordance with Utility Procedure TD-3350P-001.
- **PG&E AMM/BMP-8: Spill Prevention, Control, and Countermeasure Plan.** The EFS will be notified 30 days prior to a spill prevention, control, and countermeasure (SPCC) triggering event occurs. Events that trigger an SPCC include:
 - New storage of oil at a facility causing the total oil storage to exceed 1,320 gallons.
 - Modification to existing oil storage at a facility that contains more than 1,320 gallons of oil by addition or removal of oil containers that are greater than 55 gallons.
 - If the oil volume is contained in anything greater than 55 gallons, the SPCC Plan will be certified by a licensed engineer. SPCC containment will be installed prior to moving oil quantities requiring containment on to the PG&E substation site. The PM number will remain open until the EFS notifies PG&E personnel that the plan is certified by an engineer, and any necessary modifications are complete.
- **PG&E AMM/BMP-9: Underground Electric Cable.** Underground electric cable might require special handling and disposal as the cable may potentially be wrapped in lead or asbestos containing material, contain asbestos insulation, and/or oil for insulation. Furthermore, insulating oil used in underground cable may contain PCBs. If evidence of these hazardous materials is identified during the cable replacement, such as weeping oil from the cut end of the cable, the local EFS will be contacted immediately to arrange for sampling, and to determine transportation and disposal requirements. A PG&E authorized hazardous waste hauler may be required to transport the cable. Arc-proofing wrap that is both friable (brittle, crisp or fragile) and non-friable must be removed by a certified abatement vendor or trained PG&E personnel.
- **PG&E AMM/BMP-10: Stormwater Pollution Prevention Plan.** A Stormwater Pollution Prevention Plan (SWPPP) will be prepared for the PG&E substation improvements.
 - Construction work will not commence without: a Waste Discharger Identification (WDID) number issued by the State Water Quality Control Board (SWQCB); SWPPP training conducted by authorized personnel designated by the Stormwater Quality subject matter expert (SME), and a hard copy of the SWPPP placed on-site by the Stormwater Qualifies SWPPP Practitioner (QSP). The SWPPP will be kept on the PG&E substation site by the on-site construction representative for the duration of the PG&E substation improvements project.
 - All PG&E and contractor staging areas not in an established yard or on pavement will require environmental approval prior to establishment.
 - PG&E personnel will work with the EFS when evaluating spoils for third party giveaway or disposal at a landfill.

- All spoils from the PG&E substation improvements will be sampled and analyzed for no less than the following constituents: TPHg+BTEX, TPHd, TPHmo, CAM17.
- Spoils taken directly to a PG&E spoils consolidation yard will not require sampling provided they do not exhibit evidence of contamination or naturally occurring asbestos. PG&E personnel will contact the EFS to confirm whether they are eligible to utilize the PG&E spoils yard(s).
- Wet and dry spoils will not be mixed and will be managed separately.
- All wet spoils will be stored in water-tight containment so as to prevent wet spoils or liquids from contacting the ground.
- If the soil exhibits contamination during excavation (e.g., chemical/petroleum odor, discoloration) or contains hazardous materials (e.g., paint, lampblack, metal waste or slag), PG&E personnel will stockpile and segregate the soil and contact the EFS.
- Surplus spoils (wet/dry) will only be disposed of at PG&E approved landfills listed in ENV-4000P-01-JA15 Job Aid: PG&E Authorized Disposal and Recycling Facilities.
- **PG&E AMM/BMP-11: Retain a Qualified Paleontological Principal Investigator.** A paleontological resources principal investigator who meets the standards set forth by the Society of Vertebrate Paleontology will be retained to ensure that all measures related to paleontological resources are properly implemented.
- **PG&E AMM/BMP-12: Inadvertent Paleontological Discoveries.** If paleontological resources are discovered during construction activities, the following procedures will be followed:
 - Stop work immediately within 50 feet.
 - Contact the designated lead on staff with the project proponents (depending on the location of the resource) immediately. The designated lead will notify the CPUC.
 - Protect the site from further impacts, including looting, erosion, or other human or natural damage.
 - The principal investigator will evaluate the discovery and make a recommendation to the CPUC as to whether or not it is a unique paleontological resource. The CPUC will have 24 hours to respond to this recommendation, and the lack of response within 48 hours will indicate concurrence with the recommendation.
 - If the resource is not a unique paleontological resource, then it will be documented appropriately, and no further measures will be required.
 - If the resource is a unique paleontological resource, the principal investigator, in consultation with the project proponent, will recommend resource-specific measures to protect and document the paleontological resource, such as photo documentation and avoidance or collection. The CPUC will have 24 hours to respond to these measures, with no response within 48 hours indicating concurrence. Unique resources inadvertently discovered during augering will be documented as indicated above, but, due to safety concerns, any remaining resource below ground will not be salvaged. If the resource can be avoided, then CPUC concurrence will not be necessary.

- If collection is necessary, the fossil material will be properly prepared in accordance with the project proponents, Society of Vertebrate Paleontology guidelines, and CPUC requirements, and/or curation at a recognized museum repository. Appropriate documentation will be included with all curated materials.
- Any material discovered on private land is the property of the landowner and permission must be granted by the landowner for the material to be removed and curated.

Once the resource is determined to be not unique, or appropriate treatment is completed as described above, work may resume in the vicinity.

- **PG&E AMM/BMP-13: Paleontological Construction Monitoring.** Paleontological monitors, approved by the paleontological resources principal investigator, will be retained to conduct monitoring of the initial ground-disturbing activities, as described below. Monitoring requirements vary with the sensitivity of the mapped sediments. The monitor will track the sediment types during this initial ground-disturbing phase to map out the depth of the high-sensitivity formations. The type of construction activity to monitor is as follows:

High Surface Sensitivity – older alluvium (Qoa)

In locations where the ground has been previously disturbed by agricultural or other development, monitoring is required only when excavation or grading exceeds the depth of previous disturbance.

In locations where no previous disturbance exists, full-time monitoring is required when excavation, grading, or trenching exceeds 3 feet in depth. During monitoring, a qualified paleontological monitor, as determined by the principal investigator, will observe construction activity and check spoils piles to watch for the appearance of fossil resources.

Augering that uses a drill bit 3 feet or less in diameter will not be monitored. Small-diameter drill bits generally result in pulverized rock by the time they reach the surface; therefore, any fossils contained within will not be identifiable. Larger-diameter drill bits (i.e., greater than 3 feet) often bring up intact chunks of rocks that may contain identifiable and scientifically important fossils (particularly microfossils). All large, angled tubular-steel pole locations will be monitored.

During work, a portion of the excavated material will be examined visually and through screen sifting, if necessary. If screening is necessary, then a sample of spoils may be collected and processed, either on-site or off-site as work on pole placement proceeds. Should unique fossil material be discovered, it may be recorded and collected if the resource is determined by the principal investigator to be worth salvaging. Otherwise, it will be recorded and included in the final monitoring report. Should it be determined that the type of auger or drill being used renders monitoring unuseful (i.e., materials come out of the hole in a pulverized powder or a silty mud), monitoring will be discontinued.

Because it is extremely unsafe and impractical to excavate fossils from within an auger bore or drill hole, and because doing so would unnecessarily disturb fossils further, no effort will be made to collect buried fossils indicated in spoils materials. However, the location and nature of the materials identified will be recorded. This will be documented in the final monitoring report and reported to repositories as appropriate.

These measures are based on currently available data. As construction proceeds and additional data become available, the principal investigator could revise the measures with CPUC concurrence. Should monitors identify fossil remains during the course of construction, PG&E AMM/BMP-12 will be implemented.

All monitoring activities will be documented on daily logs. Monitoring logs and reports will include a description of the activities observed, geology encountered, resources encountered, and measures taken to protect or recover discoveries. Photographs and other supplemental information will be included as necessary. A final monitoring report will be developed to document locations, methods, and the results of monitoring.

- **PG&E AMM/BMP-14: Fossil Recovery.** In the event that unique paleontological resources are encountered, protection and recovery of those resources may be required. The principal investigator will oversee the recovery effort in consultation with the project proponents (depending on the location of the resource), the CPUC, and property owners as appropriate. The principal investigator may designate a paleontologist to implement the recovery, prepare specimens for identification and preservation, and complete all field documentation in accordance with the project proponents, Society of Vertebrate Paleontology guidelines, and CPUC requirements, and/or curation at a recognized museum repository. If a fossil is not accepted by a museum for curation, then project proponents will have fulfilled their obligation for fossil recovery.
- **PG&E AMM/BMP-15: Cultural Resources.** If any cultural resources are located during project activities, Utility Procedure ENV-8005P-01 will be implemented, which includes:
 - Stop all ground-disturbing work within 100 feet of the discovery location to avoid impacts.
 - Immediately notify a PG&E Cultural Resource Specialist, who will assess the discovery.
 - Leave the site or the artifact untouched.
 - Record the location of the resource, the circumstances that led to discovery, and the condition of the resource.
 - Do not publicly reveal the location of the resource and ensure the location is secured
- **PG&E AMM/BMP-16: Human Remains.** Section 7050.5 of the California Health and Safety Code (CHSC) states that it is a misdemeanor to knowingly disturb a human burial. In keeping with the provisions provided in CHSC Section 7050.5 and Public Resource Code 5097.98, if human remains are encountered (or are suspected) during any project-related activity, the following measures will be implemented:
 - Stop all work within 100 feet.
 - Immediately contact a PG&E Cultural Resource Specialist, who will notify the county coroner.
 - Secure location but do not touch or remove remains and associated artifacts.
 - Do not remove associated spoils or pick through them.
 - Record the location and keep notes of all calls and events.
 - Treat the find as confidential and do not publicly disclose the location.
- **PG&E AMM/BMP-17: Cultural Resource Training.** A field engineer, construction supervisor, or an environmental field services person will read PG&E's Cultural Resources: Awareness and Response brochure to the construction crew on the electric distribution project prior to the start of ground disturbance.

- **PG&E AMM/BMP-18: Light and Glare Reduction.** Construction lighting and permanent substation exterior lighting will be selectively placed and shielded to minimize nighttime glare.
- **PG&E AMM/BMP-19: Conduct Pre-Construction Survey(s) for Special-Status Species and Sensitive Resource Areas.** Biologists will conduct pre-construction survey(s) for special-status species and sensitive resource areas immediately prior to construction activities within suitable aquatic and upland habitat for special-status species. If a special-status species is encountered on the project site, the project proponents will be contacted immediately to determine the appropriate course of action. For federally or state listed species, the project proponents will contact the appropriate resource agency (USFWS and/or CDFW), as required.
- **PG&E AMM/BMP-20: Avoid Impacts on Nesting Birds.** If work is scheduled during the nesting season (February 1 through August 31), nest detection surveys will correspond with a standard buffer for individual species in accordance with the species-specific buffers set forth in the project proponent's Nesting Birds: Specific Buffers for PG&E Activities, and will occur within 15 days prior to the start of work activities at designated construction areas, staging areas, and landing zones to determine nesting status by a qualified biologist. Nest surveys will be accomplished by ground surveys and will support phased construction, with surveys scheduled to be repeated if construction lapses in a work area for 15 days between March and July. Access for ground surveys will be subject to property access permission.

If active nests containing eggs or young are found, the biologist will establish a species-specific nest buffer, as defined in the project proponent's Nesting Birds: Specific Buffers for PG&E Activities. Where feasible, standard buffers will apply, although the biologist may increase or decrease the standard buffers in accordance with the factors set forth in Nesting Birds: Specific Buffers for PG&E Activities. Nesting pair acclimation to disturbance in areas with regularly occurring human activities will be considered when establishing nest buffers. The established buffers will remain in effect until the young have fledged or the nest is no longer active as confirmed by the biologist. Active nests will be periodically monitored until the biologist has determined that the young have fledged or once construction ends. Per the discretion of the biologist, vegetation removal by hand may be allowed within nest buffers or in areas of potential nesting activity. Inactive nests may be removed in accordance with PG&E's approved avian permits. The biologist will have authority to order cessation of nearby project activities if nesting pairs exhibit signs of disturbance. All references in this applicant-proposed measure (APM) to qualified wildlife biologists refer to qualified biologists with a bachelor's degree or above in a biological science field and demonstrated field expertise in ornithology, in particular, nesting behavior.

- **PG&E AMM/BMP-21: Biological Monitoring.** Biologists will monitor initial ground-disturbing activities in and adjacent to sensitive habitat areas to ensure compliance with best management practices and APMs, unless the area has been protected by barrier fencing to protect sensitive biological resources and has been cleared by the biologists. The monitor will have authority to stop or redirect work if construction activities are likely to affect sensitive biological resources.

If a listed wildlife species is encountered during construction, project activities will cease in the area where the animal is found until the qualified biologist determines that the animal has moved out of harm's way or, with prior authorization from USFWS and/or CDFW if required, relocates the animal out of harm's way and/or takes other appropriate steps to protect the

animal. Work may resume once the qualified biologist has determined that construction activities will not harm any listed wildlife species. The project proponents will be responsible for any necessary reporting to USFWS and/or CDFW.

- **PG&E AMM/BMP-22: Special-Status Species Protection.** All trenches/excavations in excess of 2 feet deep will have a sloped escape ramp or be covered at the end of the day. All trenches and excavations will be inspected for wildlife at the beginning of the workday and prior to backfilling. In addition, open-ended project-related pipes 4 inches or greater in diameter will be capped if left overnight or inspected for wildlife prior to being moved. If a special-status species is discovered in a trench, excavation, or pipe, the animal will be left undisturbed, and the pipe will not be moved until the special-status species has left the area on its own accord. In the event that any special-status species is trapped and unable to leave on its own accord, a permitted biologist, defined as a qualified biologist that holds the appropriate federal and/or state permits, will recover and relocate the special-status species. In addition, all food scraps, wrappers, food containers, cans, bottles, and other trash from the project area will be deposited in closed trash containers or kept in closed vehicles. Trash containers will be removed from the project area on a regular basis.
- **PG&E AMM/BMP-23. San Joaquin Kit Fox and Blunt-nosed Leopard Lizard Protection.** The following species-specific procedures will be followed:
 - For San Joaquin kit fox:
 - If a potential den is present, establish a 50-foot exclusion zone.
 - If a known den is present, establish a 100-foot exclusion zone.
 - If a natal or pupping den is present, establish an appropriate exclusion zone *in coordination with USFWS and CDFW*.
 - If impacts to dens cannot be avoided, determine if dens are occupied.
 - If dens are unoccupied, remove them by hand following the USFWS procedures.
 - Cap pipes and install exit ramps in excavations more than 2 feet deep to avoid entrapment or mortality.
 - For blunt-nosed leopard lizard:
 - Establish an exclusion zone of 50 feet.
 - Do not use monofilament plastic for erosion control.
 - Inspect trenches open more than 24 hours.
 - Contact a qualified biologist before moving trapped amphibians or reptiles to nearby suitable habitat.
 - If occupied or potentially occupied burrows are present, establish an exclusion zone of 50 feet.
- **PG&E AMM/BMP-24: Dead or Injured Special-Status Wildlife.** If any dead or injured special-status wildlife or birds protected by the Migratory Bird Treaty Act are discovered at the project site during construction, work will stop in the immediate vicinity. The project proponents will notify the on-call biologist and the appropriate resource agency (USFWS and/or CDFW) before construction is allowed to resume.

- **PG&E AMM/BMP-25: Avoidance of Sensitive Aquatic Features.**

The project will be designed to avoid sensitive aquatic features (i.e., jurisdictional wetlands, waters, and riparian areas) to the extent feasible. Specific avoidance strategies include the following:

- Siting permanent structures in uplands outside of existing drainage features.
- Siting staging areas, pole/tower work areas, pull sites, and other temporary staging/materials storage areas in uplands outside of existing drainage features/riparian areas, utilizing developed/urban, agricultural land, or ruderal land in preference to native terrestrial or riparian habitats.
- Selecting access roads and overland travel routes in uplands while avoiding other sensitive features (e.g., steep slopes, rare plant localities, and sensitive wildlife habitats).
- Should access or work areas be required through or within jurisdictional wetlands and waters, all regulated activities within jurisdictional wetlands and waters (e.g., waters of the United States and waters of the State) will require regulatory approval/permitting from the appropriate agency including U.S. Army Corps of Engineers [USACE], CDFW, and/or Regional Water Quality Control Board [RWQCB] prior to any work within jurisdictional features.
- Prior to construction, sensitive aquatic features slated for avoidance will be identified in the field and clearly marked for avoidance using flagging tape, fencing, and/or high-visibility signage. Construction personnel will be trained on feature avoidance marking and associated restrictions.

- **PG&E AMM/BMP-26: Geotechnical Report with Soil Performance Standards.** A site-specific geotechnical investigation by a licensed geotechnical engineer will be prepared to develop appropriate conclusions and recommendations for final design including foundations of the PG&E substation improvements. The geotechnical report would also provide appropriate soil stability measures to be implemented during construction activities. Based on available references, loam and clay loam are the primary subsurface materials expected to be encountered in the excavated areas as project construction proceeds. Potentially problematic subsurface conditions may include unstable soils. Where unstable or liquefiable soils are encountered during design studies or construction, appropriate measures will be implemented to avoid, accommodate, replace, or improve unstable soils and liquefaction hazards. Such measures may include the following:

- Locating construction staging and operations away from areas of unstable soil
- Over excavating unstable soils and replacing them with suitable non-expansive engineered fill
- Increasing the density and strength of unstable soils through mechanical vibration and/or compaction
- Treating unstable soils in place with binding or cementing agents
- Adding physical ground improvement such as in situ soil mixing, drain piles, or sheet piles
- Deepening of trench and/or using trenchless technology to place underground fiber cables, conduits, and fiber terminations beneath liquefiable fills and/or potential for lateral spreading, where feasible.

2.3.4 Project Construction

Proposed Solar Project Construction

Construction Deliveries, Haul Routes, and Access

All materials for solar project construction would be delivered by truck. Sections of SR 152 would need to be temporarily improved to accommodate equipment delivery. The shoulder along eastbound SR 152 would be temporarily restriped as an acceleration lane east of Billy Wright Road, as was the case during the construction of the Wright Solar Project, an existing solar project located near the solar project site, south of Billy Wright Road. Existing striping on this section of SR 152 would be restored after project construction is completed. All traffic from construction activities would be temporary and would occur along area roadways as workers and materials are transported to and from the solar project site.

Solar project components (e.g., PV solar panels, support structures, and electrical interconnection equipment), with the exception of pre-assembled components, would be brought to the solar project site and assembled. Water for dust control would either be supplied by the SLWD through existing connections to the solar project site, or delivered to the solar project site by trucks, as discussed below under *Water*. The number of employees working on the solar project at any time would vary, with a peak employee level of 400 persons. Under the greater impact scenario where water is being trucked in from the off-site well, on a peak day, approximately 1,373 daily trips are assumed for project construction-related automobiles and trucks, with 443 trips in the a.m. peak hour and 398 trips in the p.m. peak hour. This estimate includes construction trucks and vehicles associated with the PG&E substation improvements, discussed below under *Proposed PG&E Substation Improvements Construction*. The project (including the solar project and the PG&E substation improvements) would require construction contractors to use Tier 4 Final engines greater than 25 horsepower for off-road equipment to reduce construction-related exhaust emissions.

All truck traffic would occur on designated truck routes and major streets. The solar project includes implementation of a Construction Traffic Control Plan (CTCP) to direct construction-related automobiles and trucks to the safest routes. While the CTCP would be subject to Caltrans review and would be implemented under an encroachment permit through Caltrans, a preliminary plan has been developed in consultation with Caltrans District 10 based on their experience with construction of the Wright Solar Project. Key elements of the solar project's CTCP are described below. During implementation of the CTCP, non-project vehicles traveling to and from the Billy Wright Landfill would continue to have full access at the SR 152/Billy Wright Road intersection. Although not required to address a specific project safety impact, if requested by Caltrans, the project proponents could also include applicable signage related to seasonal issues (i.e., fog) in the CTCP.

Construction Automobiles

All construction-related automobiles using eastbound SR 152 would be directed to turn right onto Billy Wright Road to reach the solar project site. Automobiles would approach the solar project site by taking Exit 403B off of I-5, travelling approximately 0.85 miles east on SR 152, and turning right onto Billy Wright Road. Automobiles would then travel approximately 1 mile south on Billy Wright Road and turn right on to a site access point on APN 078-172-001 (the easternmost parcel on the solar project site), as shown in Figure 2-2. This access point would be retained as a permanent access point during project operation, as described above under *Site Access*.

All construction-related automobiles using westbound SR 152 would be directed to continue past the Billy Wright Road intersection to the SR 152 / I-5 interchange. At that point the detour would direct vehicles to leave the expressway and use the loop ramps to turn onto eastbound SR 152 and continue to a right turn onto Billy Wright Road, following the route described above.

All exiting automobile traffic from the solar project site would be directed to turn left onto northbound Billy Wright Road. All exiting automobiles from northbound Billy Wright Road would be required to turn right onto eastbound SR 152; no left turns would be permitted for construction traffic at this location. Automobiles wishing to head west on SR 152 would be directed to turn right onto SR 152, make a U-turn at the SR 152 / Volta Road intersection, and continue westerly from that point.

Oversized Trucks

Oversized trucks will access the solar project site via the SR 152 / Billy Wright Road intersection in the same manner described above for construction automobiles. Oversized trucks exiting the solar project site would be directed to turn left onto Billy Wright Road and travel northbound to the SR 152 / Billy Wright Road intersection. All oversized trucks exiting northbound Billy Wright Road would be required to turn right onto eastbound SR 152. Oversized trucks that are destined for I-5 or for SR 152 west of I-5 would be directed to continue eastbound on SR 152 into Los Banos to the signalized SR 152 / SR 165 (Merced Springs Road) intersection. At that point oversized trucks would turn right and continue south on SR 165 to its interchange on I-5 where a right turn would send trucks back to the I-5 / SR 152 interchange.

Non-Oversized Trucks

Regular construction trucks, including water trucks, would access the solar project site from the north via the SR 152 / SR 33 interchange. A detour would not be required for these vehicles. Vehicles would proceed along San Luis Drive and the dirt road at its southern terminus, accessing the solar project site from a temporary access point along the western boundary of the solar project site.

Construction Parking and Staging

During construction of the solar project, all employees would park within the solar project site boundary. Approximately 5-10 acres of parking spaces, temporary office facilities, and equipment staging would be constructed to provide temporary onsite parking for construction staff. This area and the aggregate material placed on it would be reclaimed at the end of substantial construction and redeployed elsewhere on the solar project site. The construction parking and staging area would be located at the northwest corner of the solar project site.

Construction Utilities and Service Systems

The solar project's construction utility and service system requirements are described below.

Electricity

The temporary office and construction facilities would obtain electricity from a temporary drop-off line from the local electrical distribution system. However, if access to the distribution system is unavailable, up to 10 diesel generators that meet local and state emission control requirements would be used throughout the project area during construction.

Waste Disposal

Construction sanitation needs would be met through contract with an appropriate sanitation company to provide, clean, maintain, and remove portable toilets and sinks. Portable sanitation facilities would be placed at the main staging area and at temporary staging areas throughout the solar project site as needed. Upon completion of construction, the portable sanitation facilities would be removed.

Construction waste materials such as metal and wood would be separated from the waste stream and recycled whenever feasible. In accordance with the California Green Building Code (CALGreen), at least 65 percent of waste from construction and demolition would be diverted through recycling and/or salvage. Non-recyclable construction waste would be placed into commercial trash dumpsters located on-site that would be serviced by a licensed solid waste hauler in the County.

Water

The solar project is anticipated to require 370 acre-feet (approximately 121 million gallons) of water during the entire construction period, or approximately 330,315 gallons per day; actual water consumption would depend on climatic conditions (EMKO Environmental, Inc. 2023).³ Water usage during construction would be required for soil conditioning, road maintenance, dust suppression, and other uses. Water for construction would either be supplied by the SLWD through existing connections to the solar project site or transported to the solar project site via 4,000-gallon water trucks. As discussed in Section 3.19, *Utilities and Service Systems*, the use of SLWD water would require the approval of a Construction Water Agreement and Solar Water Management Agreement for the project by the SLWD. The use of water from the Mid-Cal well would require approval of a groundwater export permit by the Merced County Board of Supervisors consistent with Merced County's Groundwater Mining and Export ordinance. The method that is ultimately implemented will depend on which approvals are granted. Under the well option, construction water would be provided from the Mid-Cal well located adjacent to SR 33 at the northwest corner of AKT's Mid-Cal property, approximately 4.4 miles north of the solar project site. The Mid-Cal well is just southeast of the intersection of State Route 33 and McCabe Road, north of Santa Nella in Merced County, California. The well currently provides water to irrigate corn used for dairy cattle feed. The most recent records available indicate that the Mid-Cal well produces approximately 502 acre-feet per year for irrigation (EMKO Environmental, Inc. 2023). During use of the Mid-Cal well to supply water for the proposed project, irrigation would not be curtailed or reduced in any way; there would be no effect on agricultural production.

Under the well option, a total of 30,140 round trips between the well and the solar project site would be necessary to transport water for dust control during construction. The average number of daily truck trips during the construction period to deliver water would be approximately 75 round trips, with up to 137 round trips on peak days (although this would be infrequent). Construction water trucks would access the solar project site via the SR 152 / SR 33 interchange and San Luis Drive, as described above under *Construction Access and Deliveries*.

Site Preparation and Grading Activities

Site Disturbance

The solar project has been designed to limit grading to the extent feasible. The solar project site is primarily flat, and little grading would be required. However, grading of approximately 50 acres would be needed in some areas to achieve the solar panel design standard of 5%–15% maximum slope for

³ Daily water use during construction would vary, depending on weather conditions and time of year, both of which would affect the need for dust control. Hot, dry, windy conditions would require greater amounts of water.

north and south aspects. Earthwork would focus on cut and engineered fill as necessary to create finished grade slopes suitable for panel installation. Graded areas would be cleared and grubbed; vegetative material would be stockpiled onsite and distributed back onto disturbed surfaces once grading is complete.

Grading and Compaction

As shown in Table 2-3, footnote “a,” a portion of APN -078-172-001 is excluded from the solar project site. Solar project construction would disturb a total of approximately 1,287 acres (Table 2-4). Approximately 50 acres of land would be impacted by grading activities for roads, parking, battery storage facilities, solar project substation, fencing, laydown yard, and solar PV installation, gen-tie line installation among other improvements. Approximately 97,300 cubic yards of aggregate material for roads would be imported to the solar project site. Compaction may also be required. Roads and other work areas would be periodically sprayed with water to reduce dust. Roads and work areas may also be treated with approved dust-suppression products.

Tree Removals

The approximately 53 trees located within the solar project site would likely need to be trimmed or removed during construction of the solar project, particularly if they are in proximity to solar project development plan features, such as within solar array areas. Refer to Figure 3.4-4 in Section 3.4, *Biological Resources*, for a map of trees located within the solar project site that may be affected.

Fire Protection

Perimeter roads and evenly distributed interior access roads within the solar project site would conform to Merced County and State of California Fire Code standards. Existing roads would be improved and new roads constructed using an aggregate base. In addition, the solar project would meet the minimum standards set forth by Public Resources Code (PRC) 4290, Title 14, for fire protection and emergency water standards.

Equipment Installation

Construction activities for the solar project would include the installation of civil infrastructure (e.g., roads, utilities, fencing), mechanical infrastructure (e.g., tracking components, PV panels), and electrical infrastructure, as listed below.

Civil Infrastructure Activities

- Survey and project layout, including road, panel, and support buildings.
- Construction of roads, including placement of aggregate material.
- Construction of temporary facilities, parking, and staging areas.
- Installation of the chain-link fence and gates.
- Watering for dust control and soil compaction.
- Installation of the inverter, and control room pads.

Mechanical & Electrical Infrastructure Activities

- Installation of metal piers and placement of a racking system on top of metal piers. Placement of PV solar modules and DC collection system.
- Installation of a wire harness, fuses, and wire grounding.
- Trenching for wires to be buried underground.
- Installation of buried wiring.
- Installation of the inverter/transformer structures.
- Wiring and interconnection.
- Construction of the DC collection system.
- Trenching and installation of MVCS from inverters/transformers to the solar project substation.
- Construction of the solar project substation.
- Construction of the interconnection (gen-tie line) to the PG&E transmission/distribution system.
- Construction of the BESS (AC or DC).

Phased Schedule and Workforce Requirements

Phased construction of the solar project is planned to begin in 2024, after Merced County approval of permits and other entitlements, final engineering, and procurement activities. Final construction phasing would be determined during project financing but, for the purposes of this SEIR analysis, it is assumed that some construction phases may occur simultaneously. The solar project applicant anticipates that construction and testing of the solar project would take a total of 14 months to complete. Therefore, solar project construction is expected to be completed in 2025. The peak construction workforce is not anticipated to exceed 400 workers, depending on scheduling constraints. Construction activities would occur 6 days a week from 7:00 a.m. to 6:00 p.m., Monday through Saturday. If needed to maintain the construction schedule, low noise-generating construction activities, such as delivery offloads, panel laying, cable laying and terminating, may take place between 6:00 p.m. and 8:00 p.m. However, the solar project applicant would avoid nighttime construction activities within portions of the solar project site that are close to existing residential areas to the greatest extent feasible.

Prior to operation, the solar project applicant would work with the County, PG&E, the construction contractors, and other involved agencies or entities to test and commission the solar PV system, battery storage, electricity transmission systems, and other installations on the solar project site.

Phasing

The assumptions of construction phases, dates, and work days used for the analysis in this SEIR are shown in Table 2-5. Construction is anticipated to last 14 months, from April 2024 through May 2025.

Table 2-5. Construction Phases, Dates, and Work Days

Project Element/Phase	Start Date^a	End Date^a	Work Days
Site Preparation	4/1/2024	9/28/2024	120
Underground Work	5/1/2024	3/31/2025	208
PV System Installation	5/1/2024	3/31/2025	208
Battery Storage System Installation	10/1/2024	4/30/2025	148
Substation and Gen-Tie Line Installation	10/1/2024	4/30/2025	148
Testing and Commissioning	5/1/2025	5/31/2025	21
Project Site Restoration	5/1/2025	5/31/2025	21
PG&E Substation Improvements	10/1/2024	5/31/2025	169

^a Construction emissions were analyzed for a construction period beginning April 2024, based on the anticipated construction schedule at the time of the environmental analysis; however, the actual construction schedule is now anticipated to begin in the fall of 2024. Over time, construction equipment, trucks, and worker vehicle fleets will become lower emitting due to technological improvements, more stringent regulations, and older vehicle turnover. Therefore, the emissions presented here are likely to be higher than those that would actually occur and represent a conservative analysis.

Proposed PG&E Substation Improvements Construction

As previously described in Section 2.3.4, construction of the PG&E substation improvements would involve the installation of new electric equipment, including new circuit breakers, bus structures, 70-kV disconnect switches, transformers, protective relaying, metering and control equipment, telemetering equipment, an electric grounding system, and underground conduits or trench systems. As shown in Table 2-5, construction of the PG&E substation improvements would overlap with the solar project's Battery Storage System Installation, Substation and Gen-Tie Line Installation, Testing and Commissioning, and Project Site Restoration phases, and would take approximately eight months to complete. Construction trucks and automobiles associated with the PG&E substation improvements would be minimal (up to 25 daily trips) and would have separate site access from Jasper Sears Road via the SR 152 / SR 33 interchange.

Refer to Section 2.3.3, *PG&E Avoidance and Minimization Measures/Best Management Practices* for a list of construction AMM/BMPs that would be implemented during construction of the PG&E substation improvements.

2.3.5 Solar Project Decommissioning and Site Reclamation Plan

Decommissioning and site reclamation would begin immediately after the 35-year lifespan of the solar project, expected in 2060. A decommissioning and reclamation plan has been prepared in accordance with Merced County requirements and is included in Appendix 2-1 of this SEIR. A final decommissioning plan will be prepared closer to the time of decommissioning to account for anticipated future land uses. The plan would ensure that the solar project facilities would be decommissioned and removed and that the solar project site would be restored to pre-construction conditions, except as described below. The decommissioning and reclamation plan outlines specific traffic control measures to implement during the decommissioning phase. Revegetation of the solar project site would take place after removal of all infrastructure and debris. Soils and affected areas would be reclaimed to a level that would, at a minimum, support uses for the land consistent with pre-construction activities, which consist of grazing. The

decommissioning and site reclamation plan would be reviewed and approved by the County as part of the project permitting process. The decommissioning and site reclamation process is expected to take approximately 12 months, and given the large footprint of the solar project, the process may be completed in multiple phases to ensure the entire solar project site is returned to its prior condition.

Equipment Removal

All solar project structures would be removed during decommissioning; however, it may be advantageous to leave some site improvements in place to support the future agricultural operations that would follow removal of the solar generating facility. The final decommissioning plan would describe how some roads and other features may be left in place to accommodate more efficient farming practices. Decommissioning would involve removal of all aboveground structures, facilities, native grade access roads, and partial removal of buried infrastructure, and revegetation and seeding. Temporary erosion and sedimentation control Best Management Practices (BMPs) would be used during decommissioning and restoration.

Equipment that would be removed includes electrical wiring, solar PV equipment, lithium-ion batteries, the BESS, and associated equipment. Equipment would be de-energized prior to removal, salvaged (where possible), placed in appropriate shipping containers, and secured in a truck transport trailer for shipment offsite for salvaging, recycling and/or disposal consistent with applicable requirements.

Many electrical components would likely be removed from the solar project site and prepared for salvage depending on the equipment, associated warranties, technical capacities, and market valuation at the time of removal; this includes the inverters, converters, low voltage switchgears, medium and high voltage switchgears, and a high voltage transformer. These components are modular with units individually bolted to concrete pads that support them. Once these components have been removed, the mounting and supporting structures would also be removed with as many components as possible being recycled through the appropriate processes. Solar PV panels, racking systems, batteries, and enclosures would be removed from the site and prepared for either resale, recycling, or responsible disposal. The concrete pads that support the inverters and transformers would be removed.

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

Following the removal of the above-grade equipment from the solar project site, the piers that the solar racking was mounted onto would also be removed. These structures would need to be extracted vertically using machinery capable of pulling each pier out individually to minimize soil disturbance. Once these have been removed, all of the solar racking equipment would either be sold for salvage value or recycled. In addition, the majority of the underground electrical equipment, including medium voltage electrical collection, would be extracted and removed from the solar project site. However, electrical conduit and other materials that are installed more than 3 feet below the ground surface would be decommissioned in accordance with county requirements.

The fences and gates would be removed, and all materials would be recycled to the greatest extent possible. All debris would be removed from the area. All native grade roads will be reclaimed as part of the overall site grading and soil restoration. Graveled all-weather roads will not be reclaimed and will be incorporated into best management practices of future agricultural activities.

Site Reclamation

During this phase, all access roads and parking areas would be removed from the solar project site unless retained for other purposes following decommissioning. If the underlying soil exhibits significant compaction, it would be disked to aerate the soil and allow it to return to its prior condition. If necessary, fresh topsoil would be spread over the area before being leveled to match the existing grade and to provide suitable conditions for revegetation. Once this has been completed, a mix of rangeland seeds would be spread or sown into the soil as specified by local authorities.

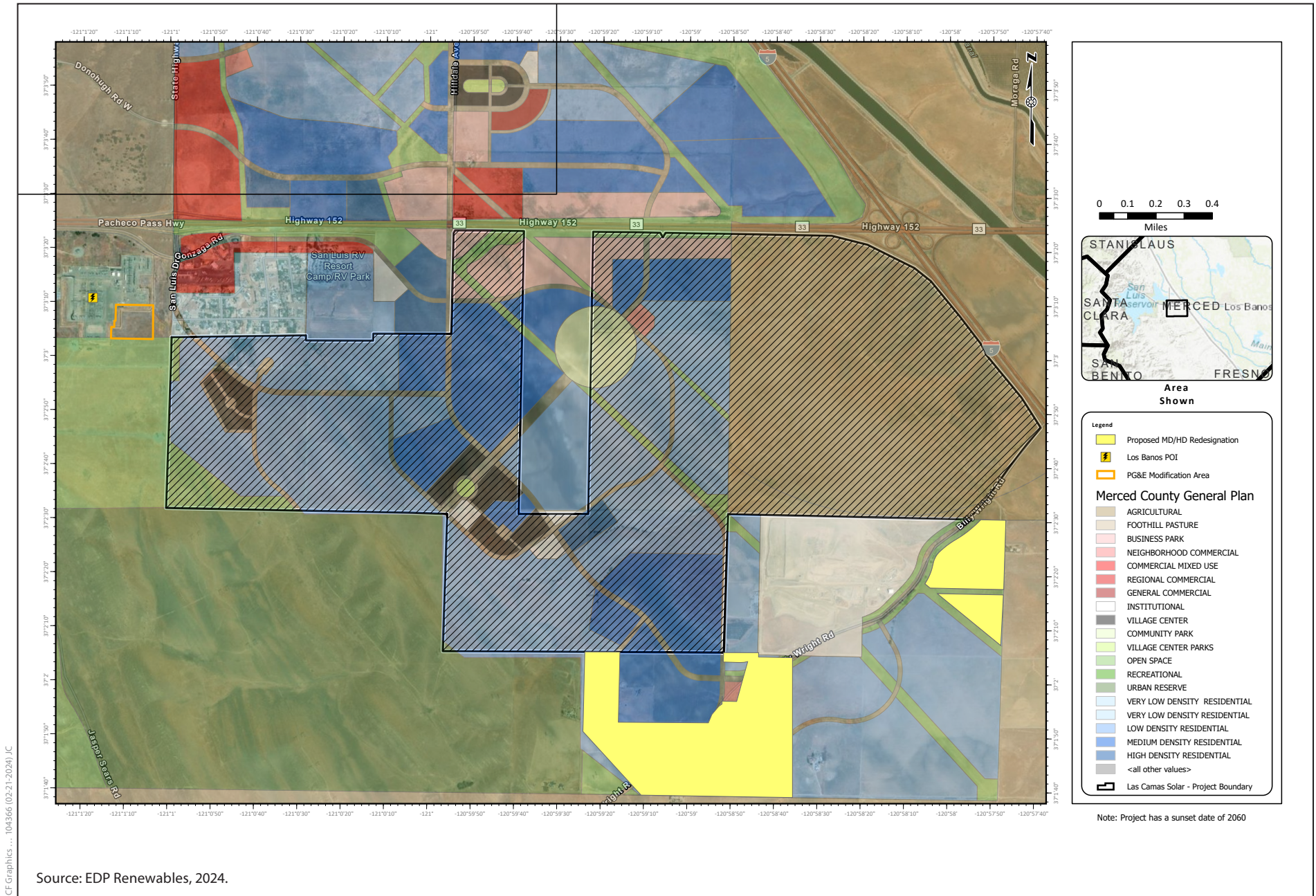
2.3.6 Land Use Redesignations and Rezoning

Construction and operation of utility-scale facilities or high-voltage electrical infrastructure is currently not allowed on the portion of the solar project site that falls within the General Plan's *Urban Community* land use designation as part of the Villages of Laguna San Luis Community Plan (Community Plan). The Community Plan designates the solar project site for various residential, commercial, and park land uses.

Accordingly, the proposed project would require an amendment to the Merced County General Plan and the Community Plan to create a *Utility-Scale Solar Overlay* (overlay) and associated zone change covering the solar project site that allows the following as conditional uses:

- *Energy Generation Facilities (off-site energy use)* as currently allowed by Conditional Use Permits in all agricultural zones;
- *Communication Equipment, Electrical Distribution/Transmission, Substation* as currently allowed by Conditional Use Permit in all agricultural zones;
- *Public Utility Facilities* as currently allowed by Conditional Use Permit in Rural Residential zones; and,
- Additional ancillary buildings, fencing, roads, and equipment.

The proposed project would also require an amendment to the General Plan to re-designate 202.8 acres off-site and immediately south and southeast of the solar project site from low-density residential to high-density/medium-density residential (off-site General Plan amendment). The 202.8 acres are referred to as the "off-site residential redesignation area." The off-site residential redesignation area is shown in Figure 2-9. The off-site residential redesignation area includes approximately 189.6 acres of Farmland of Local Importance (76.8 percent), 38.5 acres of Farmland of Statewide Importance (15.6 percent), 16.7 acre of Grazing Land (6.8 percent), and 2 acres of Unique Farmland (0.8 percent). The off-site residential redesignation area comprises APNs 078-190-008, 078-190-027, 078-190-028, and portions of APNs 078-190-011, 078-190-013, 078-200-006, and 078-200-088 and currently contains undeveloped grassland, up to two single-family residences, and a few agricultural crops.



Source: EDP Renewables, 2024.



Figure 2-9
Proposed General Plan Amendment

This change would preserve the overall number of affordable housing units that could be developed in the County during the life of the solar project. That is, the proposed off-site General Plan amendment would maintain the County's capacity for developing new high-density/medium-density housing.⁴ The proposed project does not propose the construction of new housing or any other type of physical development within the off-site residential redesignation area; rather, it proposes moving the approved Community Plan approved densities from one area to another to continue to accommodate the total approved units within the plan. Development under the Community Plan requires approval of Implementation Plans for each specific area identified in the Community Plan. Implementation Plans must not only be consistent with the Community Plan, but also include specific implementation measures identified in the Community Plan. Implementation Plan approval by the County is a discretionary action, and the Community Plan anticipates that supplemental environmental review will be required for approval of the Implementation Plans (Community Plan Table 5-02). As stated on page 1-3 of the Community Plan Draft EIR, "no development may occur until such time as additional environmental review has been completed for each Implementation Plan in accordance with CEQA." Future development with the off-site residential redesignation area, should it occur, would be subject to this requirement.

The proposed General Plan, Community Plan and Zoning Amendments would include a sunset date of 40 years after the approval date of the amendments and overlay zone. This would allow the solar project to be constructed and operated for its full 35-year lifespan, and properly decommissioned before the solar project site is returned to a physical state consistent with the prior condition of the site and zoning designation appropriate for real estate development. Any potential repower of the solar project would have to be sought via extension of the overlay and other applicable permits from the County, and discretionary actions that would require CEQA compliance. Similarly, the proposed change in the allowed density for the off-site residential redesignation area would also sunset at the same time, and the land use designation and zoning for that area would revert to those that currently exist. The draft Community Plan Amendment is included in Appendix 2-2 of this SEIR.

2.3.7 Off-site Mitigation Site

USFWS is considering issuing an incidental take permit (ITP) under Section 10 (a)(1)(B) of the federal Endangered Species Act (ESA) for the take of San Joaquin kit fox, a federally listed endangered species. Under Section 10(a)(2)(A) of the federal ESA, any application for an ITP must include a "habitat conservation plan" that details the impacts of the incidental take allowed by the ITP on affected species and how the impacts of incidental take will be minimized and mitigated to the maximum extent practicable. Similarly, CDFW is considering issuing a state ITP under Fish and Game Code Section 2081(b) for the San Joaquin kit fox (also a state-listed threatened species) and Swainson's hawk, a state-listed threatened species. Under Fish and Game Code Section 2081(b), permittees must implement species-specific minimization and avoidance measures, and fully mitigate the impacts of the project.

The applicant has proposed the establishment of an off-site mitigation site for the San Joaquin kit fox and other covered species, as necessary. An area of approximately 1,498 acres of grassland habitat referred to as the "off-site mitigation site" would be placed into a conservation easement in perpetuity. The proposed permit term is 40 years, and encompasses construction, operation and maintenance, and

⁴ Table 5A-2 in the County's Housing Element designates high-density residential uses in the Community Plan as Lower Income and medium-density residential uses as Moderate Income.

decommissioning activities. The off-site mitigation site is located approximately 5 miles south of the solar project site, immediately south of Los Banos Reservoir (see Figure 2-2) (APNs 088-040-012, 088-040-014, 088-090-001, 088-070-092, and 088-070-052).

The off-site mitigation site is comprised primarily of annual grasslands that provide suitable habitat for covered species. A paved road bisects the site from east to west, and surface access roads span the center of the site and encompass the inside perimeter of the site. The site is currently used for livestock grazing. An existing barbed wire fence encompasses the entire 1,498-acre site.

Habitat management on the off-site mitigation site would be governed by a habitat management plan subject to approval by USFWS and CDFW. Upon granting of the easement, the site would continue to be used for grazing and remain as suitable habitat for covered species. Livestock grazing would be conducted under a grazing management plan with specific guidance on grass height and residual dry matter (RDM) on the site to protect the grasslands and to allow them to continue to function as habitat for covered species. During years of extreme weather such as drought or above average rainfall, the grazing intensity would be adjusted to properly meet the grass height and RDM criteria. The specifics of grazing management and monitoring will be outlined in a USFWS-and CDFW-approved habitat management plan.

The USFWS and CDFW ITPs would also include requirements for on-going monitoring of the off-site mitigation site to ensure that the habitat remains suitable for covered species. It is anticipated that monitoring would be performed annually for the first 5 years following recordation of the conservation easement and then at a reduced frequency for the remainder of the permit term. Monitors would traverse the site by foot and vehicle to assess habitat, vegetation, and signs of use. Depending on the requirements of the ITPs, monitors may also place cameras at the site to document kit fox use of the site. Monitoring activities may require overland travel to access the more remote parts of the off-site mitigation site.

All mitigation lands would adhere to County ordinances regarding fire protection, fire breaks, and fire management. Roadways would be maintained to allow access by the grazing tenant and those monitoring the conservation easement. The existing fencing around the perimeter of the mitigation site would reduce vandalism and theft and would be designed to allow for continued dispersal of special-status and common wildlife that may use the mitigation lands. Targeted invasive plant management activities would be necessary to prevent invasion by pest plant species.

2.4 Required Approvals

The applicant has submitted an application for a conditional use permit, zone change, and General Plan and Community Plan amendments to the Merced County Community and Economic Development Department for the solar project. The following required permits and approvals have been identified as potentially required for the solar project. Additional permits and approvals may also be required.

- Merced County, General Plan and Community Plan Amendments, Zone Change, Solar Benefits Agreement/Fiscal Impact Report/Decommissioning Plan, and Conditional Use Permit. These permits are required to create an overlay on the solar project site and redesignate the 202.8-acre off-site residential redesignation area from low-density residential land use to high-density/medium-density residential land use for the life of the solar project.

- Merced County, Construction Permit (Building Permits), Right of Way Encroachment Permit, and Rights-of-Way Crossing Consent Forms. Merced County authorizes construction activities under a Construction Permit. This permit encompasses grading, building, electrical, mechanical, landscaping, and other activities. Merced County may require multiple building permits due to the size and complexity of the solar project. Merced County's review of the permit application is for compliance with applicable policies and standards. A right-of-way encroachment permit and/or right-of-way crossing consent forms from the County Department of Public Works may also be required.
- Water permits/approvals:
 - Construction Water Agreement and Solar Water Management Agreement pursuant to the San Luis Water District's Rules and Regulations, adopted pursuant to California Water Code Section 35423, to effect orderly, efficient, and equitable distribution and use of water, *OR*;
 - Merced County, Groundwater Export Permit. Merced County authorizes groundwater to be used outside of the groundwater basin from which it is withdrawn pursuant to a groundwater export permit.
- Central Valley Regional Water Quality Control Board (Central Valley Water Board) – National Pollutant Discharge Elimination System (NPDES) Permit and Report of Waste Discharge. Construction of the project would disturb a surface area greater than 1 acre; therefore, the applicant would be required to obtain a NPDES permit from the Central Valley Water Board. As part of this permit, a stormwater pollution prevention plan would be developed and implemented. Pursuant to California Water Code Section 13260, all persons proposing to discharge waste that may affect the quality of waters of the state must submit a Report of Waste Discharge to the Central Valley Water Board, following which the board will either prescribe waste discharge requirements or issue a waiver.
- San Joaquin Valley Air Pollution Control District (SJVAPCD) – Indirect Source Review and dust control plan. An Indirect Source Review (District Rule 9510) would be filed with the SJVAPCD to determine potential mitigation, if any, for oxides of nitrogen and particulate matter less than or equal to 10 microns in diameter emissions. A dust control plan is required to be submitted and approved by the SJVAPCD prior to initiation of ground disturbance associated with construction.
- USFWS Incidental Take Permit. The applicant would consult with USFWS to obtain an Incidental Take Permit under Section 10 of the federal Endangered Species Act (ESA) for San Joaquin Kit Fox, if necessary.
- California Department of Fish and Wildlife (CDFW) Incidental Take Permit. If it cannot be avoided, the applicant would consult with CDFW to obtain an Incidental Take Permit under Section 2081 of the California Endangered Species Act (CESA) for San Joaquin Kit Fox and Swainson's hawk, if necessary.
- California Independent System Operator (CAISO) – Connection approval. CAISO is responsible for management of the flow of electricity across high-voltage, long-distance power lines under its control in California. CAISO approval is required for connecting to the Pacific Gas and Electric Company's Los Banos substation.
- California Department of Transportation – Right-of-Way Encroachment Permit and Permit for Transportation of Oversized Loads on State Route (SR) 152 during construction.

2.5 References Cited

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3.0 Introduction

This chapter contains an evaluation of the environmental impacts of the proposed project for compliance with the California Environmental Quality Act (CEQA). The sections listed below examine the short- and long-term adverse impacts on the physical environment from the project.

3.0.1 Resources Considered in This SEIR

Based on the project description and the County of Merced’s understanding of the environmental issues associated with the project, the following topics are analyzed in detail in Chapter 3, Sections 3.1 through 3.20, of this subsequent environmental impact report (SEIR):

- 3.1—Aesthetics
- 3.2—Agricultural and Forestry Resources
- 3.3—Air Quality
- 3.4—Biological Resources
- 3.5—Cultural Resources
- 3.6—Energy
- 3.7—Geology, Soils, and Paleontological Resources
- 3.8—Greenhouse Gas Emissions
- 3.9—Hazards and Hazardous Materials
- 3.10—Hydrology and Water Quality
- 3.11—Land Use and Planning
- 3.12—Mineral Resources
- 3.13—Noise
- 3.14—Population and Housing
- 3.15—Public Services
- 3.16—Recreation
- 3.17—Transportation
- 3.18—Tribal Cultural Resources
- 3.19—Utilities and Service Systems
- 3.20—Wildfire

For each resource topic, the SEIR presents the following information:

- **Environmental Setting**—Existing site and study area conditions are described.
- **Regulatory Setting**—Pertinent federal, state, and local policies, regulations, and standards are described.
- **Impacts and Mitigation Measures**
 - **Methods for Analysis**—Describes the technical methodology for impact assessment. If models were used to assess impacts, they are described in this section, as are other technical tools.
 - **Thresholds of Significance**—Presents the thresholds used to determine the significance of the impacts. The significance conclusions noted at the end of each impact discussion are defined below.
 - **No Impact:** This level of significance is used for impacts when there is clearly no effect (i.e., when it was clear at the outset that there would be no impact on a particular resource topic under any of the alternatives).
 - **Less than Significant:** This level of significance is used for impacts when there would be an impact, but the degree of the impact would not meet or exceed identified thresholds.
 - **Less than Significant with Mitigation:** This level of significance is used for impacts that meet or exceed identified thresholds, but implementation of mitigation measures would reduce such impacts to less-than-significant levels.
 - **Significant and Unavoidable:** This level of significance is used when mitigation is not available or feasible to reduce a significant impact to a less-than-significant level.
 - **No new or substantially more severe significant impacts would result beyond those identified in the previous EIR:** This conclusion is used when the proposed project would not cause new significant impacts not identified in the Community Plan EIR and would not substantially increase the severity of significant impacts identified in the Community Plan EIR.
 - **New or substantially more severe significant impacts would result beyond those identified in the previous EIR:** This conclusion is used when the proposed project would cause new significant impacts not identified in the Community Plan EIR and/or would substantially increase the severity of significant impacts identified in the Community Plan EIR.
 - **Impacts and Mitigation Measures**—Describes the effects of the proposed project. For each identified significant or potentially significant impact, mitigation measures are identified. As stated above, when mitigation is not available or feasible to reduce an impact to a less-than-significant level, the impact is identified as significant and unavoidable. The impact analysis evaluates separately the following components of the proposed project (described in Chapter 2, *Project Description*):
 - Solar Project
 - Land Use Redesignations and Rezoning
 - Construction

- Operation
- Decommissioning
- Off-Site Mitigation Site
- PG&E substation improvements

Where mitigation is required, the impact analysis specifies which component(s) of the project is required to implement the mitigation. After considering the impacts of the individual project components, an impact determination for the total project is made, based on the impact of the project as a whole.

Topics required by CEQA in addition to the resource topics addressed in Chapter 3 are addressed in Chapter 4, *Alternatives Analysis*, and Chapter 5, *Other Required CEQA Considerations*. Chapter 4 examines a range of feasible alternatives to the project, including a No Project Alternative, to reduce one or more of its potential environmental impacts. Chapter 5 includes the following additional topics:

- Cumulative Impacts
- Growth-Inducing Impacts
- Significant Irreversible Environmental Changes
- Significant and Unavoidable Impacts

3.1 Aesthetics

This section identifies and evaluates the project's potential impacts on aesthetic resources, including impacts to scenic vistas, scenic highways, the visual character and quality of the project site, and changes to light and glare. This section also describes existing conditions on the project site and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments (off-site residential redesignation); and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site residential redesignation are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Issues identified in response to the Notice of Preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. Comments on the NOP pertaining to aesthetics were focused on concerns over how the proposed project would look from surrounding areas, in particular residential areas; how the project could affect views toward the mountains; the project being located within the line of site from nearby homes; the potential for glare; and the potential for dust to be present during construction along I-5 and SR 152.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.1.1 Introduction to Terminology and Methodology

Aesthetic and visual resources are assessed by evaluating the visual character and visual quality of the resources that compose the project environment before and after construction of the proposed project and how these changes will affect the surrounding natural and built environments.

- *Visual character*, including attributes such as form, line, color, and texture, is used to describe, not evaluate, the visual environment; that is, these attributes are neither considered good nor bad.
- *Visual quality* is used to describe what viewers like and dislike about the visual resources that compose a particular scene.

The analysis uses seven descriptive ratings to qualify visual quality: very high, high, moderately high, moderate, moderately low, low, very low. A very high visual quality rating corresponds to more pristine natural environments that are untouched by humans as well as built or project environments that are extremely well designed. As such, higher visual quality ratings represent landscape compositions that are vivid, evoking feelings of awe and wonderment. A very low visual quality

rating corresponds to highly disjunct landscapes that have been haphazardly altered by humans. As such, lower visual resource ratings correspond to landscape compositions that evoke negative emotional responses in viewers. A moderate visual quality rating corresponds to typical or average visual conditions that are common to rural and developed landscapes. These landscapes tend to have elements that are both higher and lower in visual quality but lack features that notably enhance or degrade the view. In general, the more a composition meets visual preferences and expectations, the more positive the viewer response. Furthermore, the more positive the viewer response is, the more memorable, or vivid, the composition becomes. For example, a more positive viewer response occurs when a development or roadway is not perceived as an intrusion but is seen as an integrated element belonging to a harmonious and orderly landscape.

3.1.2 Existing Conditions

Environmental Setting

Regional Setting

The project site is located in the Central Valley of California, approximately 4.5 miles west of Los Banos, in unincorporated Merced County (Figure 2-1). For purposes of the visual analysis, the *project region*, as discussed in this section, is considered the area within a 30-mile radius of the project site. Hollister and the communities of Crows Landing, Newman, Gustine, Hilmar, Livingston, Atwater, El Nido, Dos Palos, Tres Pinos, and Ridgemark are also in the region. Most regional development occurs along transportation corridors, such as Interstate (I) 5, State Route (SR) 152, and SR 33, that run roughly through the middle of the region. The Diablo Range and its foothills, west of the project site, are an integral part of the region's visual character that provides topographical visual interest compared to the flat valley floor that the landforms border. East of the Diablo Range, open agricultural land is dotted with rural development that becomes increasingly urbanized near the limits of cities and towns in the region.

Agricultural land in the region, planted predominantly with orchard and row crops, stretches for miles. A patchwork of fields separates cities within the region from one another. These fields offer expansive views that extend over the valley floor to the east and Diablo Range to the west when haze is at a minimum. These landscape views are strongly characteristic of the Sacramento-San Joaquin Valley and have contributed to the regional identity.

Merced County has generally limited the conversion of agricultural land under its jurisdiction to community plan areas where development will be clustered around a commercial core. As a result, conversion of agricultural land within the I-5 corridor has not been as extensive as elsewhere within the larger region. On a regional basis, when considering neighboring counties as well, development radiating out from the cities, particularly along the SR 99 corridor, is converting agricultural land and closing the gap between larger and smaller outlying cities. This development is beginning to change the visual character along SR 99 from rural/agricultural to suburban. If the approved Fox Hills and Villages of Laguna San Luis Community Plans are developed, they will change the visual character of the lands north and east of the project site from agricultural to suburban.

A mix of agricultural, developed, and natural landscapes characterizes the project region. Water features in the greater region include the San Joaquin River and its tributaries, San Luis and Los Banos Creek Reservoirs, O'Neill Forebay, the Delta-Mendota Canal, California Aqueduct, numerous creeks and sloughs, and smaller drainages and local irrigation ditches.

Solar Project Site

For the purposes of the visual analysis, the *project vicinity* is defined as the area within 0.5 mile of the solar project site. Key views (KVs), shown in Figure 3.1-1, have been chosen for their representation of the relative landscape and affected viewers and representative photographs from these locations are shown in Figures 3.1-2 through 3.1-6. These figures contain the existing setting views and the proposed solar project conditions that have been simulated, and are further discussed in Section 3.1.2, *Environmental Impacts*. The project site is at the eastern base of the Diablo Range foothills, immediately west of I-5, immediately southwest of the I-5/SR 152 interchange. The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming nonnative annual grassland. Portions of the solar project site are currently used for grazing and dry farming. The vicinity is comprised primarily of agricultural and open space land uses and is characterized by flat to rolling terrain.

I-5 runs northwest-southeast of the solar project site. The segment of I-5 north of SR 152 is officially designated as a state scenic highway and has views of the solar project site when traveling south on I-5 toward SR 152 and in close proximity to the I-5/SR 152 interchange. Views of the solar project site from further north of SR 152 are obscured due to distance and intervening, rolling terrain. Views from I-5, south of SR 152, toward the solar project site are also available near the I-5/SR 152 interchange (Figure 3.1-2, KV 1). These views are very similar to, and representative of, those seen from the officially designated portion of I-5 near SR 152. Such a view is discussed in more detail in *Environmental Impacts*. Views from I-5 toward the solar project site, further south of SR 152, are often limited by the terrain. However, there are a few breaks in the terrain that allow views of the site. SR 152 runs directly north of the solar project site and, west of I-5, is also officially designated as a state scenic highway that has views of the site from the roadway (Figure 3.1-3, KV 2). Along SR 152 east of the I-5/SR 152 interchange, views toward the solar project site are present, but terrain prevents views of the solar project site further east of the interchange.

Several smaller local roads (Billy Wright Road and Jasper Sears Road) provide access from smaller asphalt, dirt, and gravel roadways to the larger roadways and are local travel routes in the area. Travelers on these roadways have views of the solar project site when viewers are in closer proximity to the site (Figure 3.1-4, KV 3), but views are often limited when only a short distance away from the site, such as along Billy Wright Road, due to terrain.

One residential area, which includes single-family residences and the Oasis West Recreational Vehicle (RV) Park, is located between SR 152 and the solar project site. Residential viewers on the edges of this residential area have the most direct views toward the solar project site (Figure 3.1-5, KV 4). These residential viewers are described in more detail in *Viewer Groups and Viewer Response*. In addition, there are commercial land uses along SR 152, along the northwestern edge of the residential area. These land uses include the Petro Travel Center, a Motel 6, and a Chevron.

Most large trees in the vicinity are associated with residential landscaping while the rest of the landscape is largely grasslands. Wooden utility lines are common in the vicinity, paralleling local roadways, and the vicinity is traversed by a lattice steel transmission line. Wooden utility pole lines are in keeping with the rural visual character, while the lattice steel transmission lines do detract from the visual quality of the vicinity. Views in the immediate solar project vicinity are composed of rolling terrain, grasslands and agricultural fields, suburban and rural residences, businesses, roadways, and human-made features (concrete-lined waterways, wooden utility poles, and transmission lines) back-dropped by the Diablo Range and flat valley floor extending east from the foot of the range and into the distant background. The overall visual quality is

moderately high due to the picturesque quality of the rolling terrain contrasting against the adjacent flat valley floor and relatively few anthropogenic features that detract from the overall quality of most views within the landscape.

The San Luis and Los Banos Creek Reservoirs, O'Neill Forebay, the Delta-Mendota Canal, and the California Aqueduct are the major waterways in the vicinity. The San Luis and Los Banos Creek Reservoirs and O'Neill Forebay are all a part of the San Luis Reservoir State Recreation Area and are used for active and passive recreation. Views from the San Luis Reservoir and O'Neill Forebay are not available due to the rolling terrain. Views from Los Banos Creek Reservoir toward the solar project site are mostly unavailable from public use areas along the shoreline, which is located below the surrounding terrain. However, views toward the solar project site are available from higher vantages above the reservoir, such as from access roads and trails. In addition, views of the solar project site are available from the San Luis Reservoir Off-Highway Vehicle Recreation Area (OHV Recreation Area), accessed from Jasper Sears Road (Figure 3.1-6, KV 5).

While no officially designated scenic vistas are identified in the project vicinity, the rolling terrain often allows for scenic vista views from high points along local roadways, unpaved rural roadways that travel through the hillsides, and from rural residential locations out and over the picturesque landscape. Such views are most available to the public on approach and at the I-5 overcrossing with SR 152 and along SR 152 between I-5 and Hilldale Avenue, near the Apricot Hill Fruit Stand. These views are comprised of the Diablo Range's rolling, grassy foothills that transition to the patchwork of the valley's flat agricultural floor. In addition to intervening terrain, atmospheric haze that is common in the vicinity also acts to limit views.

PG&E Substation

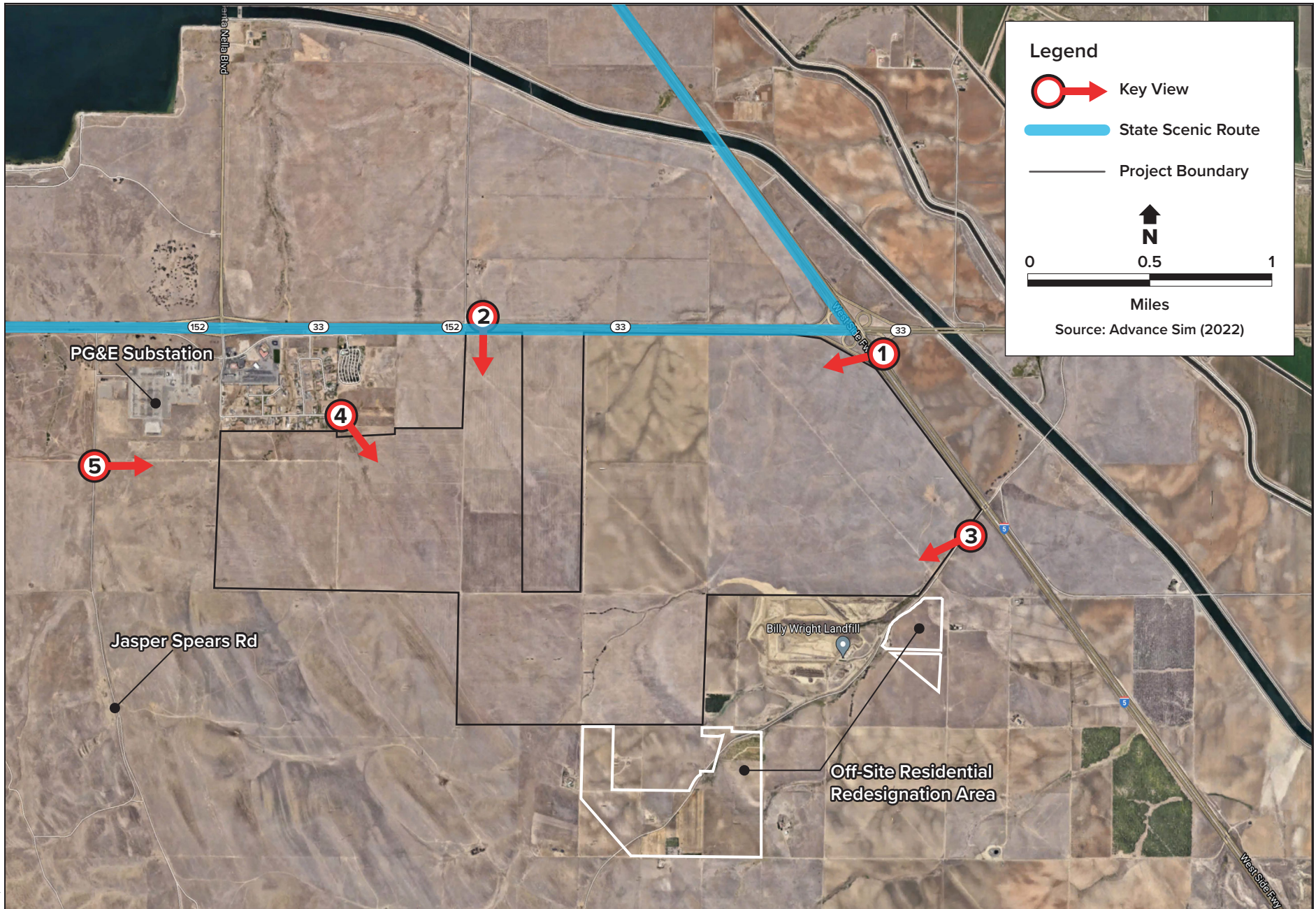
The PG&E substation is located just west of the residential and commercial land uses along SR 152. The industrial-looking site consists of solid perimeter fence that is tan; many, tall, gray lattice steel structures within the fence; interconnected wires; and several enclosed structures. The substation is built on slightly higher terrain so that views from the nearby residential and commercial areas and surrounding roadways cannot see the buildings above the solid perimeter fence. However, one tall building can be seen rising above the fence to the north of the substation, along Gonzaga Road and SR 152, in addition to the upper portions of the many lattice steel structures and wires that can be seen from all vantages surrounding the substation. Lattice steel structures and wires can also be seen converging on the substation from surrounding areas, with a heavier concentration of structures just outside the perimeter fence. The area outside the perimeter fence is grassy with a few shrubs lining the south side of Gonzaga Road.

Off-Site Residential Redesignation Area

The off-site residential redesignation area is in proximity to the Billy Wright Landfill, existing residences, and the built Wright Solar field. The visual character of the off-site residential redesignation area is substantially similar to the visual character of the solar project site, described above.

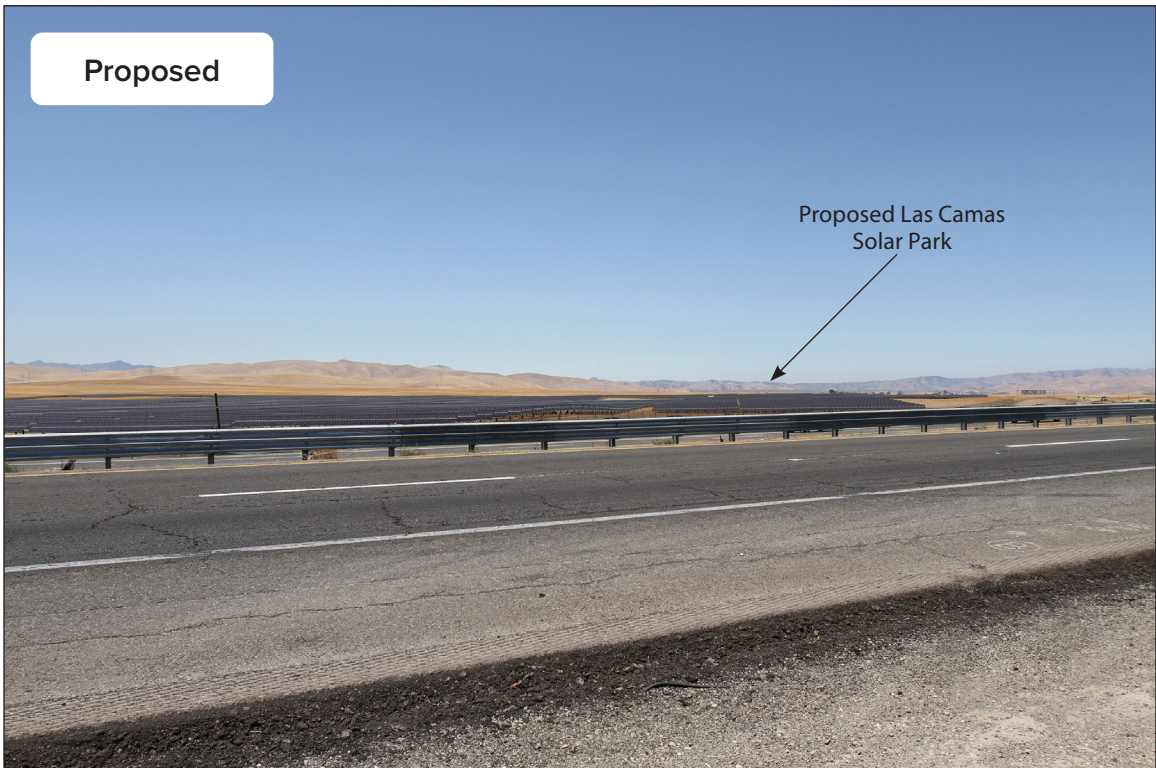
Off-Site Mitigation Site

The visual character of the off-site mitigation site is substantially similar to the visual character of the solar project site, described above. The primary difference is that the Los Banos Reservoir and Los Banos Creek provide water features that are not present in the solar project site and the terrain immediately surrounding the reservoir is steeper than that of the solar project site.



Graphics ... 104366(03-29-2024).JC

Figure 3.1-1
Key View Map



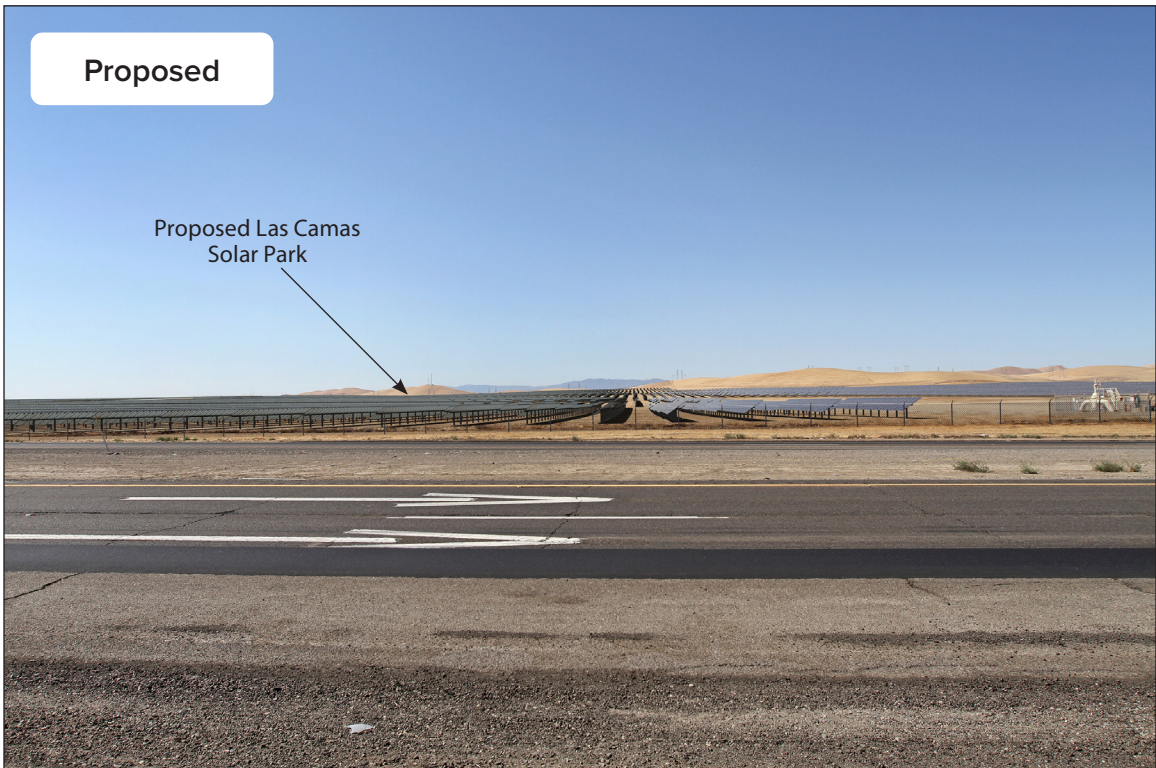
View from I-5 looking west toward the solar project site and Diablo Range.

Graphics ... 104366(03-28-2024).JC

Source: AdvanceSim (2022)



Figure 3.1-2
Key View 1, Existing and Proposed Conditions



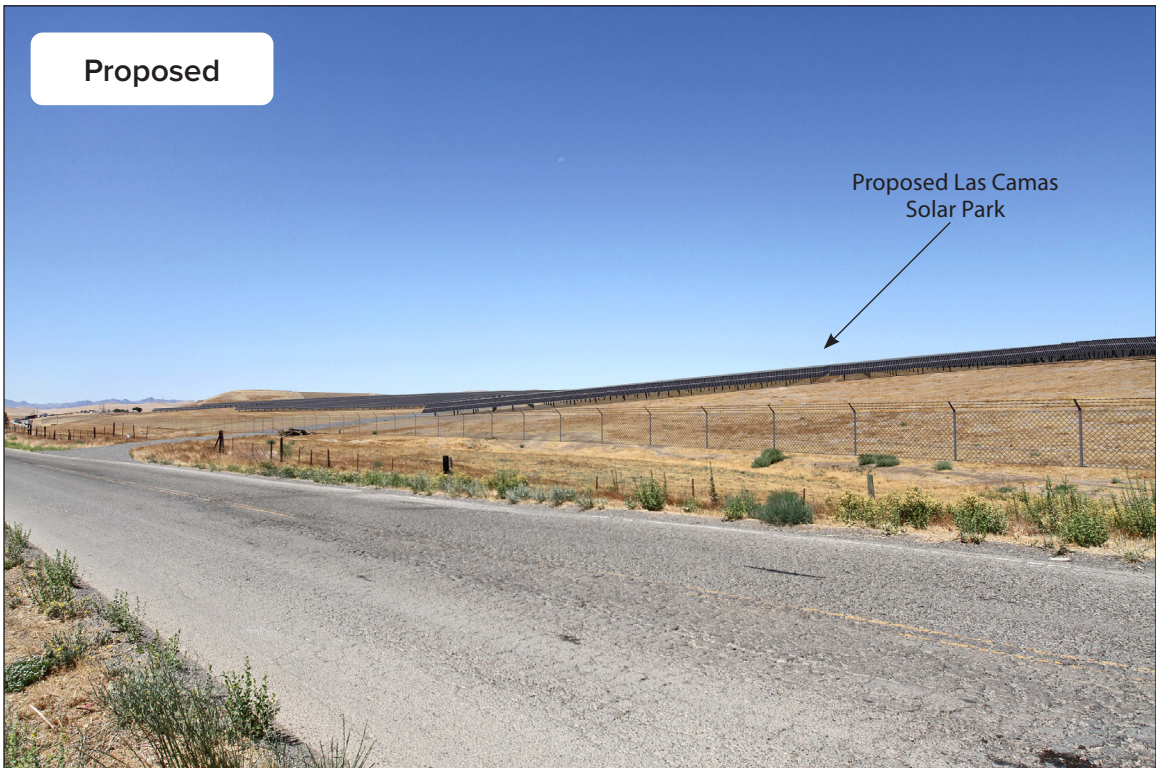
View from the Apricot Hill fruit stand along SR 152 looking south toward the solar project site and Diablo Range.

Graphics ... 104366(03-28-2024).JC

Source: AdvanceSim (2022)



Figure 3.1-3
Key View 2, Existing and Proposed Conditions



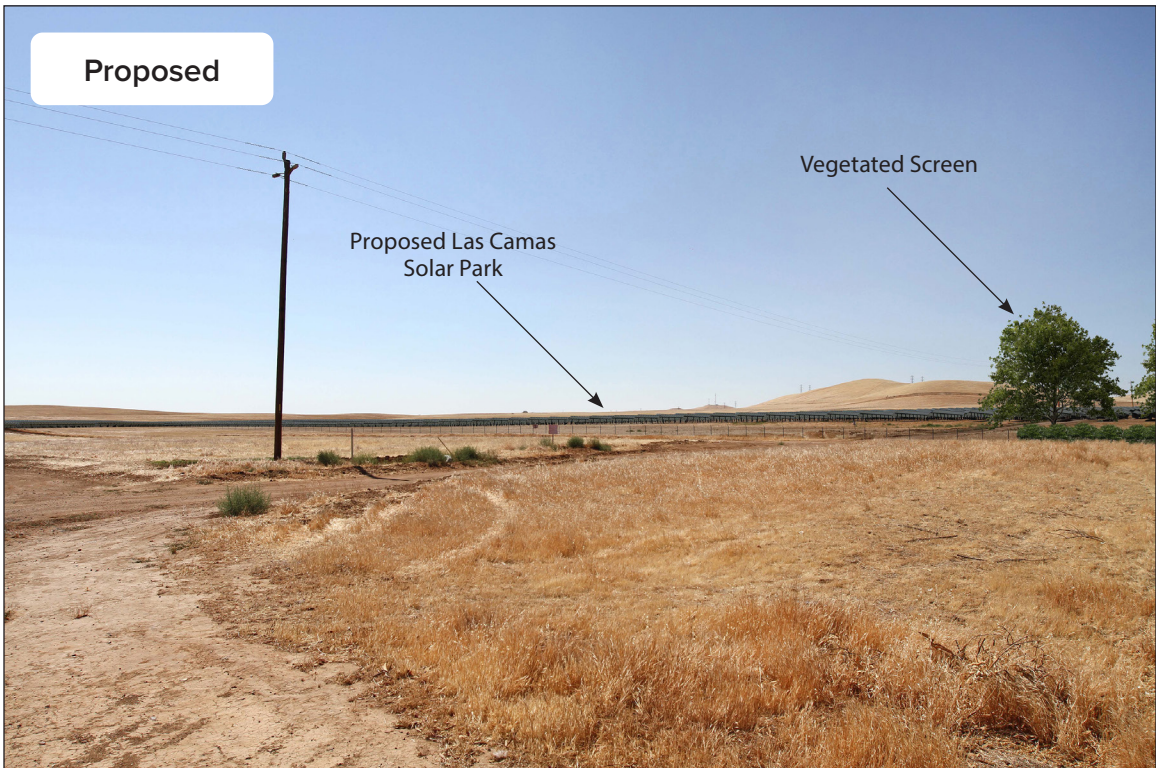
View from Billy Wright Road looking west toward the solar project site.

Graphics ... 104366(03-28-2024).JC

Source: AdvanceSim (2022)



Figure 3.1-4
Key View 3, Existing and Proposed Conditions



View from West Via Grande Court looking southeast toward the solar project site.

Graphics ... 104366(03-28-2024).JC

Source: AdvanceSim (2022)



Figure 3.1-5
Key View 4, Existing and Proposed Conditions



View from Jasper Sears Road near the OHV recreation area looking east toward the solar project site.

Graphics ... 104366(03-28-2024).JC

Source: AdvanceSim (2022)



Figure 3.1-6
Key View 5, Existing and Proposed Conditions

Viewer Groups and Viewer Response

Residents

Residents between SR 152 and the solar project site have views of the solar project site from the edges of the residential development and RV park, which have the most direct views toward the solar project site. This existing residential development, not constructed under the Community Plan, falls within the Villages of Laguna San Luis Community Plan boundary. Several single-family rural residences are also located within 0.50 miles south of and have views of the solar project site. As identified by the NOP comments, residents have high sensitivity to visual changes at the project site because they have a high sense of ownership of views of the surrounding picturesque landscape that is largely undeveloped. Although not constructed, the Villages of Laguna San Luis residential subdivision also borders and makes up part of the solar project site; if new homes are constructed, the subdivision would feature low-, medium- and high-density residential land uses. Residential allocations for portions of Villages of Laguna San Luis within the solar project site boundaries would be relocated to the off-site residential redesignation area, which would be south and southeast of the solar project site, on either side of, but not adjacent to, the Billy Wright Landfill. Many of these hypothetical future residents would have views of the project site from the edges of development; however, the rolling terrain limits the viewer's ability to see the project site in its entirety. In any event, no residences have been built under the Villages of Laguna San Luis Community Plan.

Businesses

The Merced County, Billy Wright Landfill is located north of Billy Wright Road, immediately south of the project site, and has limited views of the project site because of the rolling terrain. The Wright Solar Facility is a large-scale solar facility that is located a mile south of the solar project site and may have limited views of the project site. These viewers have low sensitivity to their surroundings because their focus is concentrated on the tasks associated with running the business.

Recreationists

Recreationists include people using the access roads along the California Aqueduct for walking, jogging, running, or cycling. Cycling also takes place on local roadways. Given the distance between the project site and larger residential areas, the number of recreationists is anticipated to be small. Recreationists are likely to be highly sensitive to visual changes at the project site. They are more likely to regard the natural and built surroundings as a holistic visual experience. However, they are accustomed to the presence of infrastructure in the project vicinity.

Roadway Users

Viewers who frequently travel freeways and local roadways tend to possess lower visual sensitivity to their surroundings due to familiarity with the passing landscape and higher travel speeds where the landscape passes quickly by. However, I-5 and SR 152 are officially designated state scenic highways (described below in more detail under *Regulatory Setting* for the State), and nearby local roadways possess the same general visual quality. Therefore, viewers who frequently travel on I-5, SR 152, and local roadways surrounding the project site are determined to possess moderate visual sensitivity to their surroundings due to the scenic nature of views coupled with the focus needed for concentrating on driving and roadway conditions. Travelers on this portion of I-5 may have glimpses of the site, but they would be traveling at high rates of speed. In addition, the rolling terrain mostly precludes full views of the site. Where larger portions of the site are visible from I-5, the

views are only seen briefly and in passing. Travelers on local roadways include rural residents, agricultural workers, people accessing the landfill, and commuters driving to the businesses in the area. Their views toward the site are also largely obscured by the rolling terrain, except when very close to the site or when an elevated vantage point affords views. The passing landscape becomes familiar for roadway users, and their attention typically is not focused on the passing views. At standard roadway speeds, views are of short duration and roadway users are fleetingly aware of surrounding traffic, road signs, their immediate surroundings within the automobile, and other visual features.

Regulatory Setting

There are no roadways within or near the project site that are designated in federal plans as a scenic highway or route worthy of protection for maintaining and enhancing scenic viewsheds. The following state and local regulations apply.

State

I-5 within Merced County and from the Stanislaus county line to SR 152 as well as SR 152 within Merced County and from the Santa Clara county line to the I-5 and SR 152 intersection have been designated by state legislation as scenic highways (California Department of Transportation 2019). The California Department of Transportation (Caltrans) defines a scenic corridor as the “land that is visible from, adjacent to, and outside the highway right-of-way, and is comprised primarily of scenic and natural features. Topography, vegetation, viewing distance, and/or jurisdictional lines determine the corridor boundaries.” Designated scenic corridors are subject to protection, including the regulation of land use, site planning, advertising, earthmoving, landscaping, and design and appearance of structures and equipment. Examples of visual intrusions that would degrade scenic corridors, as stipulated by Caltrans, some of which are applicable to the project, include dense and continuous development, highly reflective surfaces, industrial development that is not well integrated into the landscape, unsightly development that is not screened, scarred hillsides and landscapes, exposed and unvegetated earth, and a dominance of exotic vegetation (California Department of Transportation 2008:1, 23–25). Division 1, Chapter 2, Article 2.5, Sections 260-284 of the California state Streets and Highway Code establishes the following:

The standards for official scenic highways shall also require that local governmental agencies have taken such action as may be necessary to protect the scenic appearance of the scenic corridor, the band of land generally adjacent to the highway right-of-way, including, but not limited to (1) regulation of land use and intensity (density) of development; (2) detailed land and site planning; (3) control of outdoor advertising; (4) careful attention to and control of earthmoving and landscaping; and (5) the design and appearance of structures and equipment.

A route may be removed for consideration as a scenic route or taken out of the State Scenic Highways program when there has been significant degradation of scenic quality due to visual intrusions and changes in visual character. Not more than one-quarter (or 25 percent) of the scenic highway should be affected by visual intrusions. Examples of visual intrusions that would degrade scenic corridors, as stipulated by Caltrans, and apply to the proposed project include extensive cut and fill, scarred hillsides and landscapes, steep slopes with little or no vegetation, exposed and unvegetated earth, and a roadway scale and appearance that would be incompatible with the landscape. Unsightly land uses would include actions that result in these conditions (California Department of Transportation 2008:5, 23–25). A corridor master plan is not available for this scenic route.

The designated portion of I-5 in proximity to the solar project site is 14.9 miles long. However, the solar project site does not directly abut any segment of this scenic route. The designated portion of SR 152 is 13.8 miles long; the solar project site directly abuts SR 152. The total length of the solar project site along SR 152, from the I-5 interchange to the PG&E substation, is approximately 3.06 miles. However, the solar project site does not continually abut the SR 152 corridor because of existing residential and commercial development along SR 152 and the layout of the solar project site boundary.

Local

Merced County General Plan

The *2030 Merced County General Plan* indicates that the project site is designated as Agriculture and Urban Community (Merced County 2013), as shown in Land Use Figure 3.11-2. The associated zoning is shown in Land Use Figure 3.11-4. The location of community plans, in relation to elements associated with the proposed project, are shown in Land Use Figure 3.11-1. The following policies relating to visual resources apply.

Agricultural Element

Policy AG-3.11: Solar and Wind Energy Production Facilities. Encourage the installation of solar and wind energy production facilities in agricultural areas so long as they do not result in a tax burden to the County, do not result in permanent water transfers off productive land, or do not require cancellation of Williamson Act contracts, and do not conflict with sensitive habitats or other biological resources. In addition, approval of such facilities shall require dedications of agricultural land and habitat mitigation when impacts to these resources have been determined to be significant pursuant to CEQA, and measures to control erosion, and assurance for financing decommissioning activities.

Public Facilities and Services Element

Policy PFS-5.3: New Transmission and Distribution Lines. Encourage new transmission and distribution lines to be sited within existing utility easements and right-of-ways or utilize, joint-use of easements among different utilities to avoid impacting existing communities.

Policy PFS-5.7: Utility System Expansion. Coordinate with local gas and electric utility companies in the design and location, and appropriate expansion of gas and electric systems, while minimizing impacts to agriculture and minimizing noise, electromagnetic, visual, and other impacts on residents.

Natural Resources Element

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

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

Policy NR-4.1: Scenic Resource Preservation. Promote the preservation of agricultural land, ranch land, and other open space areas as a means of protecting the County's scenic resources.

Policy NR-4.2: Special Review Process for Structures Adjacent to Scenic Highways. Coordinate with Caltrans, during the review of proposed structures and activities located adjacent to State-designated scenic highways, to ensure that scenic vistas and local scenic values are not significantly degraded.

Policy NR-4.3: Building Design. Require that siting and design of buildings protect, improve, and enhance the scenic quality of the built and natural environments and take full advantage of scenic resources through site orientation, building setbacks, preservation of viewsheds, height limits, and the use of appropriate construction materials and exterior modulation.

Policy NR-4.4: New Roads. Consider the surrounding landscape, topography, and existing scenic values when determining the location and construction of new roads.

Policy NR-4.5: Light Pollution Reduction. The County shall develop and implement a lighting ordinance to require good lighting practices, such as the use of specific light fixtures that reduce light pollution, minimize light impacts, and preserve views of the night sky. The ordinance shall contain standards to avoid light trespass, particularly from developed uses, to sensitive wildlife corridors and refuges.

Recreation and Cultural Resources Element

Policy RCR-1.11: Scenic Resource and Public Land Protection. Encourage the use of regional parks and open space areas as a mechanism to preserve the County's natural scenic beauty and protect land for public purposes.

The Villages of Laguna San Luis Community Plan

Portions of the solar project site are located within the boundaries of the proposed Villages of Laguna San Luis. In addition, portions of the proposed Villages of Laguna San Luis border the solar project site directly to the north and south. There are a number of policies within the *Villages of Laguna San Luis Community Plan* (Community Plan) relating to visual resources that ensure the community is designed in an aesthetically pleasing manner that compliments the existing setting (County of Merced 2008a). Because the project is located directly adjacent to the county approved Villages of Laguna San Luis, the applicant should ensure that project aesthetics do not detract from the Villages of Laguna San Luis. The Villages of Laguna San Luis Community Plan includes the following selected policies relating to visual resources that illustrate its commitment to minimizing the visual intrusion of new development to the extent reasonable.

Land Use Plan

Policy 3.B.1: Prominent ridgelines and designated hillsides which are visible from the State Scenic Highway 152 shall be preserved as open space.

Policy 3.B.2: Development on hillsides shall be responsive to visual and safety considerations.

Policy 3.B.3: Minimize mass grading for residential development projects and utilize the natural topography in the siting of buildings, design of roadways, and for other improvements.

Policy 4.B.2: Minimize conflicts between development and agricultural operations through the use of buffer areas or larger lots along the edge of the CP.

Community Design Plan***Open Space Corridors***

Policy 1.G.1: Conserve prominent natural drainageways and design stormwater conveyance and detention components to emulate natural landforms.

Landscape Design

Policy 1.H.1: Promote the use of landscaping in developments which reduces heat, glare, and noise, aids in the percolation of stormwater; improves air quality; and buffers potentially incompatible land uses from one another.

Policy 1.H.2: Require the use of drought tolerant plant materials in landscaping and the retention of existing natural vegetation to conserve water and preserve water quality and reduce the need for irrigation, pesticides, herbicides, and fertilizers.

Policy 1.H.3: Design landscaping along drainage corridors and edges of detention basins with vegetation planted in groups to give an irregular, natural landscape appearance.

Architectural Design

Policy 1.I.10: All development projects shall install light fixtures that have light sources aimed downwards and shielded to prevent glare or reflection on adjoining streets or property.

Policy 1.I.11: Exterior building materials on non-residential structures shall be composed of a minimum of 50% low reflectance, non-polished materials.

Policy 1.I.12: Bare metallic surfaces (e.g., pipes, vents, light fixtures) shall be painted to minimize reflectance.

Grading

Policy 2.A.1: Prohibit uniform terraced building sites which are physically contrary to the general configuration of natural topography and which require mass grading of the majority of a residential lot.

Building and Site Design

Policy 2.B.1: Minimize visual prominence of buildings by taking advantage of existing site features for screening, such as depressions in topography, hillside plateaus, or opportunities for the addition of naturalistic clusters of vegetation.

Policy 2.B.10: Use colors and materials for structures in hillside areas which blend in with, rather than contrast with, the surrounding soil and vegetative cover of the site.

Policy 2.B.11: Discourage highly reflective surfaces and colors.

Viewsheds

Policy 2.C.1: Maintain views of natural ridge line silhouettes from the State Scenic Highway 152 corridor.

Policy 2.C.2: Site structures sufficient horizontal and vertical distances apart to provide adequate views to and from hillsides, leaving ridge lines as backdrops for development.

Drainage

Policy 2.E.1: To the maximum extent possible, drainageways should be retained in a natural state.

Policy 2.E.2: Design drainage improvements required for public safety to emulate natural riparian systems and landscapes.

Lighting

Policy 2.F.3: Prohibit floodlights or other types of lighting which disrupt adjacent properties or street visibility.

Open Space Plan

Policy 3.A.1: Maintain prominent hillsides, Ridge lines, slopes over 30%, and major drainage ways for their visual value within and adjacent to the Villages community. (Refer to Exhibit 13-Open Space Plan).

Policy 3.A.2: Provide landscaped parkways along Arterial roadways which serve as part of the community trail system, help define neighborhoods, and link significant community focal points.

Policy 3.A.3: Provide an attractive scenic highway corridor along SR-152 and I-5 of a minimum 50 feet wide in commercial areas and wider if possible in residential areas to achieve noise attenuation standards of the General Plan Noise Chapter without unsightly and tall sound walls.

Policy 3.A.5: Ensure that structures and activities located adjacent to the Scenic Highway Corridor are designed to not degrade scenic vistas and surrounding scenic values.

Policy 3.A.6: Place utility lines underground whenever possible and route overhead high voltage lines that cannot be placed underground to be as inconspicuous as possible.

3.1.3 Environmental Impacts

This section describes the proposed project's potential impacts on aesthetic resources. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

Methods for Analysis

Using the concepts and terminology at the beginning of this section and the criteria for determining significance described above, analysis of the visual effects of the project are based on the following.

- Desktop review of the project site using Google Earth and Google Street View.
- Evaluation of general site photographs and KV photographs taken from neighboring recreation areas, developments, and roadways taken on July 1, 2021.
- Evaluation of regional visual context.
- Review of project construction drawings.
- Review of the project in regard to compliance with state and local ordinances and regulations and professional standards pertaining to visual quality.
- Simulated KVs depicting before and after visual conditions.

In addition, for this analysis, a reduction in visual quality for one or more value ratings is considered to be a significant impact (e.g., moderately high to moderate).

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

Except as provided in Public Resources Code Section 21099, would the project:

- Have a substantial adverse effect on a scenic vista?
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?
- In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Impacts and Mitigation Measures

Impact AES-1: In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings, including scenic vistas? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality, including scenic vistas? (With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR)

The project site and off-site residential redesignation area are located entirely within the boundaries of non-urbanized areas. Therefore, proposed project features at these sites would not conflict with applicable zoning and other regulations governing scenic quality in an urbanized area and there would be no impact. Therefore, the impact analysis focuses on degradation of the existing visual character and quality of public views of the site and its surroundings within a nonurbanized area and its associated scenic vistas.

Impacts Identified in the Previous EIR

The Villages of Laguna San Luis Community Plan EIR (Community Plan EIR) identified that impacts to the existing visual character and quality of the site resulting from buildout of the Community Plan would be significant and unavoidable because development under the Community Plan would convert agricultural and open space lands to urban land uses that may be considered to be a loss of an aesthetically pleasing and valuable viewshed. Refer to the discussion under Impact 5.10-3 on pages 5.10-16—5.10-18 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR further identified that impacts to scenic vistas resulting from buildout of the Community Plan would also be significant and unavoidable because development under the Community Plan would convert open grasslands to urban land uses that would partially or totally block scenic vista views of the Diablo Range from I-5, SR 152, and SR 33 and permanently alter the foreground and middleground views from vehicles traveling along these roadways. Refer to the discussion under Impact 5.10-1 on pages 5.10-13—5.10-14 of the Community Plan EIR, which is

incorporated by reference. The Community Plan EIR determined that there was no feasible mitigation to reduce either impact (County of Merced 2007 and 2008a), and therefore concluded that the impact would be significant and unavoidable. As determined by conducting a desktop review of the project site and evaluating the existing conditions of photographs taken on July 1, 2021 for the simulations, conditions at and around the project site and residential redesignation area have not changed since certification of the Community Plan EIR in a way that would change its visual impacts analysis, as there are no new publicly accessible vantage points from which the project site and its surroundings can be viewed, nor have there been material changes to the viewshed from existing vantage points.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations, zone change, and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts to the existing visual character and quality of the solar project site, and its associated scenic vistas, which could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use. This change would preserve the overall number of affordable housing units that could be developed in the County during the life of the solar project. That is, the proposed off-site General Plan amendment would maintain the County's overall capacity for developing new high-density/medium-density housing. Although the proposed off-site residential redesignation would not result in the direct construction of the residential development, it would allow the County to maintain residential development capacity for future development by redistributing the already approved residential capacity to a different area within the Community Plan area and increasing the planned density within the residential redesignation area.

Development occurring at the off-site residential redesignation area would result in the same impacts on scenic vista views as described in Impact 5.10-1, *Impacts on Scenic Vistas*, for the Villages of Laguna San Luis, which states "because the project would construct urban development that could partially or wholly block views of the Diablo Range (a local scenic vista), this impact would be potentially significant." Even though re-designation would result in higher-density development, changing from low-density residential to high-density/medium-density residential, in the redesignation area, the same lands would be disturbed, and the overall potential to block views would be similar or slightly increased because of structures and landscaping associated with low-density residential that would partially or wholly block views of the Diablo Range, depending on location; terrain at a particular vantage point; and whether or not the view of the Diablo Range is partial or more expansive. Therefore, impacts from the off-site residential redesignation would be significant and unavoidable, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

No officially designated scenic vistas are identified in the project vicinity, although the rolling terrain often allows for scenic vista views from high points along public roadways and from rural residential locations, such as from KVs 1 and 2 (Figures 3.1-2 and 3.1-3, respectively). These views comprise the Diablo Range's foothills that transition to the patchwork of the valley's flat agricultural floor. Construction of the solar project would create temporary changes in views of and from the solar project site, including within scenic vista views toward the Diablo Range that are available from the I-5 overcrossing with SR 152 and along SR 152 between I-5 and Hilldale Avenue, near the Apricot Hill Fruit Stand. Construction activities would introduce considerable heavy equipment and associated vehicles, including backhoes, compactors, tractors, and trucks into the viewshed of all viewer groups. The solar project site boundaries would cover approximately 1,741 acres of land, with approximately 1,180 acres falling within the Community Plan boundaries. Construction activities would disturb approximately 1,287 acres of the solar project site.

Construction of the project would require the following temporary facilities on the site: assembly areas, access roads, parking areas, and staging and laydown areas. Dust control would be implemented during construction to reduce the potential for slowly moving dust clouds that would attract attention from visual receptors and reduce the availability of short-range views. In addition to staging areas and associated facilities, construction traffic along Billy Wright Road and the access road would be visible in the foreground and middleground to roadway users on SR 152, I-5, and nearby public roadways; recreationists using nearby public roadways; and nearby suburban and rural residential viewers. The project would create finished grade slopes no greater than 15 percent and would restore disturbed areas with stockpiled vegetative material stockpiled onsite. This would ensure the same vegetative grassland communities recolonize the site.

Viewers are accustomed to seeing heavy machinery associated with agricultural operations, but viewers would not be accustomed to seeing intense and isolated construction activities on the site because construction operations of this scale are not common in this portion of the project vicinity. However, construction would not take place over an extended period of time, and visual changes resulting from construction are considered short-term and temporary. Construction of the solar project would be less intensive than development of the Community Plan. Impacts from construction of the solar project would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. Therefore, ***no new or substantially more severe impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

The existing visual character of the solar project site is comprised of agricultural and open space land uses and is characterized by flat to gently rolling terrain. The overall existing visual quality is moderately high due to the scenic quality of the gently rolling, open space terrain that is backdropped by the surrounding hillsides, which contrasts against the adjacent flat valley floor east of the Delta Mendota Canal and relatively few anthropogenic features that detract from the overall quality of most views within the landscape. The Billy Wright Landfill is visible from the I-5 overcrossing with SR 152, but it does not notably detract from the landscape because its mounding form blends with the hillsides beyond. No officially designated scenic vistas are identified in the project vicinity, although the rolling terrain often allows for scenic views from high points along local roadways, and from rural residential locations, which includes scenic vista views. These views comprise the Diablo Range's foothills that transition to the patchwork of the valley's flat agricultural floor.

The solar power plant would introduce solar fields, or arrays, (making up much of the facilities' footprints, as shown on Figure 2-2) on much of the solar project site, collection lines, gravel access roads, and 6- to 10-foot-high chain-link perimeter fencing with three-strand barbed wire that would be visible for 35 years from the foreground and middleground of vista views available to residences along the surrounding roadways, to agricultural workers in nearby fields, and to roadway travelers using surrounding roadways.

The solar modules would be relatively low profile, made up of individual panels that would have a 5-foot clearance from the ground, for a maximum total module height of approximately 13 feet from the ground.

Preliminary designs specify that the distance between rows of the trackers would be roughly 15 feet (east-west), and row length would be no longer than 150 feet on each side of the drive arm assembly. The panels would be arranged in rows that run north-south across the rolling terrain, with the panels facing east-west, and this would create repetitive lines by the form and layout of the panels as illustrated in Figure 2-4. The panels would appear to be in straight lines when viewed in a 90° direction and looking directly north, east, south, or west toward the site or staggered diagonally when viewed in a 45° direction and looking directly northeast, northwest, southeast, or southwest toward the site. As illustrated in the simulation for KV 2 in Figure 3.1-3, the gently rolling terrain would make the linear pattern of the array slightly more pronounced, compared to installation on level ground, because viewers would be able to see the array pattern more clearly on the undulating terrain. Low-growing vegetation would be planted under and between the solar panels, helping to prevent dust. This would slightly improve aesthetics, compared to bare ground, by retaining a grassy groundcover.

As illustrated in the simulation for KV 5 in Figure 3.1-6, which is not considered a scenic vista view, the array pattern would not be evident within middleground views. The solar facility would be visible from KVs 1 and 2 (Figures 3.1-2 and 3.1-3, respectively), but the surrounding hillsides would largely remain visible above the solar facility within these scenic vista views. However, the foreground of the scenic vista views seen from the I-5 overcrossing with SR 152 and SR 152 between I-5 and Hilldale Avenue, near the Apricot Hill Fruit Stand, would include the blue or black solar panels and chain-link fencing of the solar facility that would alter the existing views of tan or green grassy fields, distracting from views of the hillsides in the middleground and background and degrading the visual quality of these views. The terrain enhances views of portions of the array yet obscures views of other portions, which can be seen in the simulation for KV 3 (Figure 3.1-4). Electrical generation infrastructure would not be visible from KVs 1 through 3 because these features would not be discernable because of distance, the orientation of the view, or intervening terrain. Residential viewers have expressed concern over the disruption of views that are available from their homes toward the surrounding hillsides. KV 4 is representative of views from the nearby residential community. As the visual simulation for KV 4 (Figure 3.1-5) shows, the solar facility would be visible from this area but would not block views of surrounding hillsides, because the solar arrays are set back approximately 675 feet from the back property line of residences. In addition, as seen in the far right of the simulation for KV 4 (Figure 3.1-5), a vegetated screen would be installed along the northern property line between the solar project site and adjacent residential uses. As identified in specific Mitigation Measure AES-1, the landscape buffer would be of a width appropriate to screen views of the solar project (up to 40 feet wide); planted as close to the northern border of the solar project as possible, without restricting access to or shading the panels; and planted between the security fencing and the SR 152 corridor to screen views of both the solar panels and fencing. The vegetated screen would reduce the visibility of the proposed solar facility

and improve project aesthetics. However, the vegetated screen could also impair views toward the surrounding hillsides. In addition, until the vegetated screen matures, residential viewers would still have direct views of the solar project.

As seen in the simulation for KV 5 (Figure 3.1-6), the solar project is not likely to greatly alter the quality of views from that location. This is because wooden and lattice steel transmission lines are a dominating feature from this vantage point that create a cluttered and industrial-looking viewshed. Therefore, it is not anticipated that the solar project would result in substantial visual changes from this particular vantage point, even when seen from the OHV Recreation Area.

The power conditioning systems (PCSs), shown in Figure 2-5, would be used for tracker systems and the number of PCSs needed would vary based on the number of trackers and panel output relative to inverter size and desired output from the PCS. PCSs would introduce a number of built containment structures visible onsite. The project substation and control room, shown in Figure 2-6, would be located along the PG&E transmission corridor, along the westernmost border of the solar project site. The substation and control room would be visible at approximately 0.25 mile away from sensitive receptors. Although they would be surrounded by the solar array, the control room enclosure housing (which resembles a small building) and substation infrastructure may still be visible because they would be taller than the solar panels. The terrain may provide elevated viewing points toward the substation location but would also help to obscure views of the substation from certain vantage points.

The proposed 230-kilovolt gen-tie line would be up to 0.4 miles long to connect the solar project substation to the Los Banos Substation and would include five tubular steel poles reaching a height of approximately 100 feet. The new steel poles and gen-tie lines would parallel existing transmission lines. As seen in the simulation for KV 5 (Figure 3.1-6), both wooden and lattice steel transmission lines are present in the vicinity and the proposed facilities would look very similar to existing facilities near the Los Banos Substation. Therefore, it is not anticipated that this would result in substantial visual changes because features associated with the gen-tie-line would be in keeping with the existing visual character, even when seen from the OHV Recreation Area.

The BESS enclosures would either be co-located throughout the site with the PV inverters (DC Option) or co-located near the western central portion of the site with the AC inverters (AC Option). The AC Option would increase the amount of infrastructure seen by nearby residences because the BESS enclosures would be centralized in one location that is approximately 0.60 mile from sensitive residential receptors while the DC Option would be dispersed throughout the site. Under the DC Option, the distributed BESS would be approximately 8 feet tall compared to the 13-foot-tall solar panels, making the BESS less visible. Terrain would also help to obscure views of the structures and equipment from certain vantage points. Nevertheless, operation of a solar PV power generation facility of this size would introduce a new source of infrastructure and anthropogenic features, altering the existing rural visual character of the landscape. It could be seen by viewers of high and moderate sensitivity and would reduce the existing scenic quality with the intrusion of human-made elements on land that is currently farmed and is largely undeveloped. The visual simulations indicate that the solar facility would impair the visual character of public views, including scenic vista views, toward the hillsides. In addition, it is possible that the facility would be more visible from locations where the viewer is closer to these project features and where scenic vista views are present. Impacts are therefore presumed to be significant.

The changes to the existing visual character resulting from project operations and maintenance would reduce the overall visual quality of scenic vista views from moderately high to moderate. Mitigation would help reduce these impacts. Given the size and location of the solar facility, as well as other constraints, feasible mitigation options are limited. As described in Chapter 2, *Project Description*, the HCP mandates that all fencing will leave openings between the fence mesh and the ground to allow for kit fox passage through the site. The entire perimeter would have fencing installed with a 4- to 6-inch clearance between the ground and bottom of the fence. Kit fox passage could be compromised if vegetation is planted along the entire fence perimeter. Therefore, a planted landscape buffer along the entire fence perimeter is not feasible as mitigation to reduce visual impacts because of the potential to affect and limit kit fox movement through the site. Avoiding impacts on kit fox, a federally protected species, outweighs avoidance of visual impacts, especially considering that the area immediately surrounding the site is currently largely undeveloped, open space grasslands that is suitable habitat for the kit fox. However, a landscape buffer can be limited to the solar project site border along SR 152 and designed to enable kit fox passage. Therefore, project-specific Mitigation Measure AES-1 would help reduce project-specific visual impacts on scenic vista views associated with the proposed project to a less-than-significant level by implementing an attractive landscape buffer along SR 152 to screen views of the solar project, thereby improving project aesthetics while maintaining kit fox passage and views of the surrounding hillsides. However, although the vegetated screen located south of the residential development would reduce the visibility of the proposed solar facility for adjacent residents, it could slightly impair the availability of scenic vista views toward the surrounding hillsides that are available from the second story of homes of residences bordering the solar project site. Compared to the development proposed under the Community Plan, though, operation of the solar project would be less intensive than development of the Community Plan and would preserve views toward the hillsides within public scenic vista views. This is because the solar panels would have a lower profile than single- or multi-story residences. Regardless, the solar project would introduce an industrial land use with no landscaping in the view compared to a mixed-use, urban development with landscaping. Therefore, the project would result in a new type of project-specific impact. Implementation of project-specific Mitigation Measure AES-1 would reduce significant impacts by implementing a landscape buffer along SR 152 to screen views of the solar project while maintaining kit fox passage and views of the surrounding hillsides and improving project aesthetics. Therefore, impacts from operation of the solar project would be less than significant with mitigation and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***With implementation of project-specific mitigation, no new or substantially more severe impacts would result beyond those identified in the previous EIR.***

Mitigation Measure AES-1: Install a landscape buffer along SR 152.

As identified in Chapter 2, *Project Description*, and in accordance with Section 18.36, *Landscaping*, of the Merced County Unified Development Ordinance, an opaque vegetated screen (Type A) would be installed along the northern property line where the solar project site abuts adjacent residential uses. This mitigation measure provides additional details to guide the design and installation of the landscape buffer. The project applicant shall plant a landscape buffer parallel to SR 152 and within the portions of the solar project site directly abutting SR 152. The landscape buffer will be planted approximately between postmile (PM) 12.26/South San Luis Drive and PM 12.49 and between PM 12.75 and PM13.63, avoiding the private property between PM 12.49 and PM 12.75. It shall be designed in a manner that incorporates attractive roadside landscaping. The landscape buffer shall serve as a visual buffer to screen views of solar project features and improve the visual quality of the roadway corridor while maintaining views of the surrounding

hillsides and providing for kit fox passage. The Merced County Community and Economic Development Department shall review project designs prior to granting a building permit to ensure that the following elements are implemented in the landscape buffer along SR 152:

- The landscape buffer shall be of a width appropriate to screen views of the solar project (up to 40 feet wide); planted as close to the northern border of the solar project as possible, without restricting access to or shading the panels; and planted between the security fencing and the SR 152 corridor to screen views of both the solar panels and fencing.
- Plant selection shall consist of shrubs and small trees that are no taller than 12 to 15 feet tall at maturity. This will ensure that the 13-foot-tall solar panels are screened while views of the surrounding hillsides are maintained.
- One hundred percent of the species composition shall reflect species that are native and indigenous to California. Native plant species can be used to create attractive spaces that are high in aesthetic quality and not only drought tolerant but able to attract more wildlife than traditional landscape plant palettes.
- The species list shall include small trees, shrubs, and an herbaceous understory of varying heights as well as both evergreen and deciduous types. Plant variety shall increase the effectiveness of the roadside planting areas by providing multiple layers, seasonality, diverse habitat, and reduced susceptibility to disease. However, per Section 18.36.050.F.3a, the Type A opaque screen shall be “opaque from ground level to a height of at least six feet, with intermittent visual obstructions from the opaque portion to a height with landscaping of at least 20 feet. The opaque screen may be composed of a wall, fence, and/or landscape berm densely planted with vegetation. Proposed planted screens will be judged on the basis of the average mature height and density of foliage of the subject species, or field observation of existing vegetation. The opaque portion of the screen must be opaque in all seasons of the year. At maturity, the screen should not contain any completely unobstructed openings more than five feet wide.” Therefore, special attention shall be paid to plant choices to ensure compliance with Section 18.36.050.F.3a of the Merced County Unified Development Ordinance at plant maturity, and regular spacing of evergreen species shall be used to provide continual, year-round screening of the solar project (e.g., ceanothus, hollyleaf redberry, manzanita) while ensuring that kit fox passage between plants, at plant maturity, is not hindered. Deciduous plant species can be included within the design to provide visual accents and interest (e.g., western redbud).
- Deviations from the landscape buffer location, composition, and height requirements may be approved by the Merced County Community and Economic Development Department. However, under no circumstances shall any invasive plant species be used at any location.
- Vegetation shall be planted within the first year following solar project completion.
- An irrigation (e.g., truck watering, tank irrigation, piped irrigation) and maintenance program shall be implemented during the plant establishment period (3 to 5 years, based on weather conditions) and carried on, as needed, to ensure plant survival. However, the design of the landscaping plan shall try to maximize the use of planting zones that are water efficient.
- If an irrigation system is used, including a tank irrigation system, areas that are irrigated shall use a smart watering system that evaluates the existing site conditions and plant material against weather conditions to avoid overwatering of such areas. To avoid undue water flows, the irrigation system shall be managed in such a manner that any broken spray heads, pipes, or other components are fixed within 1 to 2 days, or the zone or system shall be shut down until it can be repaired.

- The project applicant shall replace dead or dying plants throughout the operation of the solar project, as needed, to ensure that the landscape buffer is effectively maintained.
- The project applicant shall notify the County that the landscape buffer has been planted so that the County can inspect the installed landscape buffer upon initial completion. The County shall then inspect the landscape buffer either annually or biannually to ensure that the landscape buffer is being effectively maintained and that dead and dying plants are being replaced by the project proponent.

Decommissioning

Decommissioning and site reclamation of the solar project site would begin immediately after the 35-year lifespan of the solar project, expected in 2060. A decommissioning plan would ensure that the project facilities are decommissioned and removed and that the site would be restored to pre-construction conditions to support, at a minimum, uses that are consistent with pre-construction activities such as cattle grazing or dry farming. Following restoration, the solar project site would look very much like it does presently. Therefore, impacts from decommissioning of the solar project would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site outside of the Community Plan is approximately 561 acres and mostly fallowed agricultural land; portions are currently used for grazing and dry farming (refer to Section 3.2, *Agriculture*, for more information). Development of this land was not considered in the Community Plan EIR. This is represented as the area with no land use designation type applied to it on Figure 3.11-1, which shows up as a grassland area on the figure, directly west of I-5. The General Plan land use designation is currently General Agriculture, with a HIC Highway Improvement overlay. The effects of the portion of the project proposed to be located in this area are presented in this section.

Construction

No officially designated scenic vistas are identified in the project vicinity, although the rolling terrain often allows for scenic vista views from high points along local roadways, and from rural residential locations. These views comprise the Diablo Range's foothills that transition to the patchwork of the valley's flat agricultural floor. Construction of the solar project would create temporary changes in views of and from the solar project site, including within scenic vista views toward the Diablo Range that are available from the I-5 overcrossing with SR 152 and along SR 152 between I-5 and Hilldale Avenue, near the Apricot Hill Fruit Stand. Construction activities would be the same as described under *Changes in Proposed Land Uses and Development from the Community Plan* and would be seen as a continuation of the construction activities occurring within the Community Plan area. This would include visible temporary construction facilities and construction traffic, which would be visible in the foreground and middleground to roadway users on SR 152, I-5, and nearby public roadways; recreationists using nearby public roadways; and nearby suburban and rural residential viewers. The project would create finished grade slopes no greater than 15 percent and would restore disturbed areas with stockpiled vegetative material stockpiled onsite, ensuring that the same vegetative grassland communities recolonize the site.

Viewers are accustomed to seeing heavy machinery associated with agricultural operations, but viewers would not be accustomed to seeing intense and isolated construction activities on the site because construction operations of this scale are not common in this portion of the project vicinity. However, construction would not take place over an extended period of time, and visual changes resulting from construction are considered short-term and temporary. Therefore, impacts from solar project would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

The existing visual character of the solar project site outside of the Community Plan is also comprised of agricultural and open space land uses and is characterized by flat to gently rolling terrain. The overall existing visual quality is moderately high due to the scenic quality of the gently rolling, open space terrain that is backdropped by the surrounding hillsides, which contrasts against the adjacent flat valley floor east of the Delta Mendota Canal. In addition, there are relatively few anthropogenic features that detract from the overall quality of most views within the landscape, as seen in the existing views for KV 1 and KV 2 in Figures 3.1-2 and 3.1-3, respectively. The Billy Wright Landfill is visible from the I-5 overcrossing with SR 152, but it does not notably detract from the landscape because its mounding form blends with the hillsides beyond.

The solar project would introduce solar fields, or arrays, (making up the northeastern portion of the facilities' footprints, as shown on Figure 2-2) on much of the solar project site, gravel access roads, and 6- to 10-foot-high chain-link perimeter fencing with three-strand barbed wire that would be visible for 35 years from the foreground and middleground of views, including scenic vista views, available to roadway travelers using on SR 152 and I-5.

The solar modules would be built the same as described under *Changes in Proposed Land Uses and Development from the Community Plan* and would be relatively low profile. The panels would be arranged in rows would create repetitive lines that would appear to be in straight lines when viewed in a 90° direction and looking directly north, east, south, or west toward the site or staggered diagonally when viewed in a 45-degree direction and looking directly northeast, northwest, southeast, or southwest toward the site. As illustrated in the simulation for KV 2 in Figure 3.1-3, the gently rolling terrain would make the linear pattern of the array slightly more pronounced, compared to installation on level ground, because viewers would be able to see the array pattern more clearly on the undulating terrain. Low-growing vegetation would be planted under and between the solar panels, helping to prevent dust. This would slightly improve aesthetics, compared to bare ground, by retaining a grassy groundcover.

The solar facility would be visible from KVs 1 and 2 (Figures 3.1-2 and 3.1-3, respectively) and, although KV 2 depicts conditions within the Community Plan area, the conditions are consistent with how the solar project would look outside of the Community Plan area. From these vantages, the surrounding hillsides would largely remain visible above the solar facility. However, the foreground of the scenic vista views seen from the I-5 overcrossing with SR 152 and SR 152 between I-5 and Hilldale Avenue, near the Apricot Hill Fruit Stand, would include the blue or black solar panels and chain-link fencing of the solar facility that would alter the existing views of tan or green grassy fields. The solar array would distract from views of the hillsides in the middleground and background and degrade the visual quality of these views.

The portion of the project outside of the Community Plan area would not be visible from the OHV Recreation Area. Similarly, vantages with direct views of the solar project site outside of the Community Plan area would not have views of the project substation, control room, and substation infrastructure, due to distance and intervening terrain, suburban and commercial development along SR 152, and vegetation associated with development along SR 152. In addition, the new steel poles and gen-tie lines would parallel existing transmission lines and would look very similar to existing facilities near the Los Banos Substation. Therefore, it is not anticipated that these features would stand out in vantages with views of the solar project site outside of the Community Plan area, as seen in the simulation for KV 1 (Figure 3.1-2). The built containment structures associated with the PCS and BESS enclosures may be visible amongst the arrays. However, under the DC Option, the distributed BESS would be approximately 8 feet tall compared to the 13-foot-tall solar panels, decreasing the probability that the BESS would be visible. Terrain would also help to obscure views of the structures and equipment from certain vantage points. Nevertheless, operation of a solar PV power generation facility of this size would introduce a new source of infrastructure and anthropogenic features, altering the existing rural visual character of the landscape. It could be seen by viewers of high and moderate sensitivity and would reduce the existing scenic quality with the intrusion of human-made elements on land that is currently farmed and is largely undeveloped. The visual simulations indicate that the solar facility would impair the visual character of public scenic views, including scenic vista views, toward the hillsides. Impacts are therefore presumed to be significant.

The changes to the existing visual character resulting from project operations and maintenance would reduce the overall visual quality of public views and scenic vista views from moderately high to moderate. Mitigation would help reduce these impacts. Given the size and location of the solar facility outside of the Community Plan area, as well as other constraints, feasible mitigation options are limited. As described in Chapter 2, *Project Description*, the HCP mandates that all fencing will leave openings between the fence mesh and the ground to allow for kit fox passage through the site. The entire perimeter would have fencing installed with a 4- to 6-inch clearance between the ground and bottom of the fence. Kit fox passage could be compromised if vegetation is planted along the entire fence perimeter. Therefore, a planted landscape buffer along the entire fence perimeter is not feasible as mitigation to reduce visual impacts because of the potential to affect and limit kit fox movement through the site. Avoiding impacts on kit fox, a federally protected species, outweighs avoidance of visual impacts, especially considering that the area immediately surrounding the site is currently largely undeveloped open space grassland that is suitable habitat for the kit fox. However, a landscape buffer can be limited to the solar project site border along SR 152 and designed to enable kit fox passage. Mitigation Measure AES-1 would reduce significant impacts to a less-than-significant level by implementing an attractive landscape buffer along SR 152 to screen views of the solar project, improving project aesthetics, and maintaining kit fox passage and views of the surrounding hillsides. Therefore, the project would result in new project-specific impacts that would be less than significant with implementation of project-specific Mitigation Measure AES-1. Therefore, impacts from solar project operation would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***With project-specific mitigation, no new or substantially more severe impacts would result beyond those identified in the previous EIR.***

Mitigation Measure AES-1: Install landscape buffer along SR 152

Refer to Mitigation Measure AES-1 above.

Decommissioning

Decommissioning and site reclamation of the solar project site would begin immediately after the 35-year lifespan of the solar project, expected in 2060. A decommissioning plan would ensure that the project facilities are decommissioned and removed and that the site would be restored to pre-construction conditions to support, at a minimum, uses that are consistent with pre-construction activities such as cattle grazing or dry farming. Following restoration, the solar project site would look very much like it does presently. Therefore, impacts from decommissioning of the solar project would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Off-Site Mitigation Site

The proposed project would establish an off-site mitigation site in an area of approximately 1,498 acres located south of the solar project site. The site would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. Management of the off-site mitigation site would include grazing, mowing, and targeted invasive plant management activities. No major construction activities would be associated with establishment of the off-site mitigation site.

No major visual changes would be associated with the off-site mitigation site, and any minor visual alterations completed as part of habitat management for the targeted species would be perceived as part of ongoing maintenance associated with grazing lands and would not result in significant visual impacts to the existing visual character or quality of the off-site mitigation site and its associated scenic vista views. Therefore, impacts from the off-site mitigation site would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

PG&E substation improvements would take approximately eight months to complete and would overlap with, but be considerably less extensive than, construction activities taking place at the solar project site. Therefore, substation improvements are likely to be perceived as part of the overall construction associated with the solar project site and not an independent construction project. PG&E AMM/BMP-1 would ensure that dust clouds do not disrupt views during construction.

As described in the *Environmental Setting*, the PG&E substation is an industrial-looking site that consists of a solid tan perimeter fence; many, tall, gray lattice steel structures within the fence; interconnected wires; and several enclosed structures. The substation is built on slightly higher terrain, and buildings within the solid perimeter fence cannot be seen from nearby residential and commercial areas, with the exception of one tall building can be seen rising above the fence to the north of the substation, along Gonzaga Road and SR 152. In addition, the upper portions of the many lattice steel structures and wires can be seen from all vantages surrounding the substation. Lattice steel structures and wires can also be seen converging on the substation from surrounding areas, with a heavier concentration of structures just outside the perimeter fence. The area outside the perimeter fence is grassy, with a few shrubs lining the south side of Gonzaga Road.

The proposed substation improvements would realign the existing Los Banos Substation perimeter fencing in the southeast corner to include the expanded facilities (see Figure 2-3). Within this fencing, the new 230-kilovolt breaker-and-a-half bus section and enclosure, power circuit breakers, air disconnect switches, voltage transformers, control, power and communication cables, underground fiber cables and fiber terminations, yard lighting, and a new ground grid would be constructed. Just outside of the perimeter fence, there would be a remote terminal unit relay panel, meter receptacles, and a meter cabinet that would be visible. However, these features would not stand out amongst the other existing utility features associated with the Los Banos Substation that are located outside of the perimeter fencing during operation. Most of the proposed features built within the perimeter fence are not expected to rise above the perimeter fence. However, where proposed features built within the perimeter fence may be visible rising above the substation perimeter fence, these features would be consistent with existing infrastructure at the substation and would not stand out or detract from views associated with the substation. Tower raises on four of the existing PG&E towers are not likely to result in a noticeable change due to the number of tall towers that are already present in the landscape at and near this location. Overall, changes to the existing visual character or quality of the PG&E substation improvement site and its associated scenic vista views would be minimal. Therefore, impacts from the PG&E substation improvements would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, additional impacts would result from the solar project beyond those identified in the previous EIR and additional mitigation would be required. Impacts of development outside of the Community Plan would also be significant. Project-specific Mitigation Measure AES-1 would reduce impacts to a less-than-significant level. Impacts from the PG&E substation improvements and off-site mitigation site would be less than significant. Impacts from the off-site residential redesignation would remain significant and unavoidable, consistent with the Community Plan EIR conclusion. Therefore, when considering the project as a whole, impacts would be significant and unavoidable, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Impact AES-2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.)

Impacts Identified in the Previous EIR

The Community Plan EIR identified agricultural lands and views of the Diablo Range foothills as visual resources associated with scenic routes and the Community Plan site. The Community Plan EIR further identified that impacts to scenic highways resulting from buildout of the Community Plan would be significant and unavoidable because development under the Community Plan would convert open grasslands to urban land uses that would partially or totally block views of the Diablo Range from SR 152 and I-5. Even though the Community Plan-required 50-foot landscaped setback would provide motorists with views of open spaces and landscaped areas

adjacent to SR 152, including some background views of the Diablo Range, the permanent alteration of views from SR 152 and I-5 would be significant. Refer to the discussion under Impact 5.10-2 on pages 5.10-15—5.10-16 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR determined that implementation of Mitigation Measure 5.10-2, which requires Caltrans and County review and approval of proposed Implementation Plans where a tentative map is proposed, would not fully reduce this impact (County of Merced 2007 and 2008a), and therefore concluded that the impact would be significant and unavoidable.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

As described under Impact AES-1, the solar project would require amendments to the General Plan and Community Plan to create a Utility-Scale Solar Overlay and the off-site residential redesignation area. The potential environmental impacts to scenic highways that could result from construction and operation of the solar project are evaluated below.

Under the proposed project, development at the off-site residential redesignation area would still occur, only it would be at a higher density at the off-site residential redesignation area. Within the off-site residential redesignation area, the higher density development would still convert open grasslands to urban land uses. However, because this development would be a mile to 1.5 miles away from the scenic designated portions of SR 152 and I-5, and in the middleground of views from these roadways, it is not likely that development within the off-site residential redesignation area would block views of the Diablo Range from either roadway. Middleground views from vehicles traveling along these roadways would be permanently altered, though, regardless of the change in density of development occurring within the off-site residential redesignation area. In addition, conditions at and around the redesignation area have not changed since certification of the Community Plan EIR in a way that would change its visual impacts analysis, as the scenic resources in the vicinity of the off-site residential redesignation area remain substantially the same as they were when analyzed in the Community Plan EIR. Thus, because the same lands would be disturbed, development occurring at the off-site residential redesignation area would result in the same impacts on scenic vista views as described for the Villages of Laguna San Luis in its approved location, even though redesignation would result in higher density development, going from low-density residential to high-density/medium-density residential in the redesignation area. Therefore, impacts from the off-site residential redesignation would be significant and unavoidable, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

Impacts on scenic routes resulting from construction are similar to those described under Impact AES-1. Construction of the solar project would create temporary changes in views of and from the project site. Roadway viewers on scenic routes are accustomed to seeing heavy machinery associated with agricultural operations, but viewers would not be accustomed to seeing intense and isolated construction activities on the site because construction operations of this scale are not common in this portion of the project vicinity. However, construction would not take place over an extended period of time, and visual changes resulting from construction are considered short-term and temporary. In addition, construction of the solar project would be less intensive

than development of the Community Plan. Therefore, impacts from solar project construction would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

Impacts on scenic routes resulting from operation are similar to those described under Impact AES-1. The solar power plant would introduce solar arrays and associated facilities and infrastructure that would be visible for 35 years within the foreground and middleground to roadway travelers using designated scenic roadways.

The panels would be arranged in a manner that creates repetitive lines by the form and layout of the panels as illustrated in Figure 2-4. The panels would appear to be in straight lines when viewed in a 90° direction and looking directly north, east, south, or west toward the site or staggered diagonally when viewed in a 45° direction. As illustrated in the simulation for KV 2 in Figure 3.1-3, the gently rolling terrain would make the linear pattern of the array slightly more pronounced, compared to installation on level ground, because viewers would be able to see the array pattern more clearly on the undulating terrain. Low-growing vegetation would be planted under and between the solar panels, helping to prevent dust and reduce visual impacts. This would slightly improve aesthetics, compared to bare ground, by retaining a grassy groundcover.

As shown in KVs 1 and 2 (Figures 3.1-2 and 3.1-3, respectively), the solar array appears as a greyish color variation that drapes over the terrain and slightly contrasts against the browns and tans of the existing terrain. The terrain enhances views of portions of the array yet obscures views of other portions. Views of the surrounding hillsides, which contribute to the scenic designation of I-5 and SR 152, would not be blocked by the solar facility that drapes over the terrain, but the solar facility would be visible from these vantage points. Foreground views seen from designated scenic portions of I-5 and SR 152 would include the blue or black solar panels and chain-link fencing of the solar facility that would alter the existing views of tan or green grassy fields, potentially distracting from the hillsides in the middleground and background. Enclosure housings, fencing, and electrical generation infrastructure are not visible from these distances. They may be visible, however, from locations where the project site is within the foreground of views from other areas along SR 152. These features are not likely to be visible from designated portions of I-5, because I-5 is not designated south of SR 152.

The PCSs, shown in Figure 2-5, would be used for tracker systems and the number of PCSs needed would vary based on the number of trackers and panel output relative to inverter size and desired output from the PCS. PCSs would introduce a number of built containment structures visible onsite. The project substation and control room, shown in Figure 2-6, would be located along the PG&E transmission corridor, along the westernmost border of the solar project site. Even though they would be surrounded by the solar array, the substation and control room would be visible. This is because they would be located just over a half a mile away from motorists on the scenic routes, the control room enclosure housing and substation infrastructure would be taller than the solar panels, and the terrain may provide elevated viewing points toward the substation location. Terrain would also help to obscure views of the substation from certain vantage points along SR 152 and I-5.

The new steel poles and gen-tie lines would parallel existing transmission lines. Because both wooden and lattice steel transmission lines are present in the vicinity and the proposed facilities would look very similar to existing facilities near the Los Banos Substation, when seen from the

scenic routes, it is not anticipated that the new steel poles and gen-tie lines would result in substantial visual changes because features associated with the gen-tie-line would be in keeping with the existing visual character.

The BESS enclosures would either be co-located throughout the site with the PV inverters (DC Option) or co-located near the western central portion of the site with the AC inverters (AC Option). The AC Option would increase the amount of infrastructure seen by motorists on the scenic routes because the BESS enclosures would be centralized in one location that is approximately one mile from SR 152 while the DC Option would be dispersed throughout the site. Under the DC Option, the distributed BESS would be approximately 8 feet tall compared to the 13-foot-tall solar panels, making the BESS less visible. Terrain would also help to obscure views of the structure and equipment from certain vantage points.

As described under the *Regulatory Setting* in Section 3.1.1, *Existing Conditions*, not more than one-quarter (or 25 percent) of the scenic highway should be affected by visual intrusions in order to retain designation status. The solar project site does not directly abut any segments of I-5, but it does abut approximately 3.06 miles of SR 152. The designated portion of SR 152 is 13.8 miles long, and one-quarter of the total length equates to 3.45 miles. Although the total length of the solar project site along SR 152 is approximately 3.06 miles, from the I-5 interchange to the PG&E substation, the solar project site does not continually abut the SR 152 corridor because of existing residential and commercial development along SR 152 and the layout of the solar project site boundary. In addition, the solar panels would be located along approximately 1.97 miles of the corridor, from I-5 to the Oasis West RV Park. Nevertheless, similar to the developments analyzed in the Community Plan EIR, operation of a solar PV power generation facility of this size would introduce a new source of infrastructure and anthropogenic features, which would constitute a visual intrusion to views from scenic routes, thereby altering the existing rural visual character of the landscape. It would be seen by roadway travelers of moderate sensitivity and would reduce the existing scenic quality with the intrusion of human-made elements on land that is currently farmed and is largely undeveloped.

The changes to the existing visual character resulting from project operations and maintenance would reduce the overall visual quality of views seen from scenic routes. The solar project would not be required to implement Mitigation Measure 5.10-2 from the Community Plan EIR because it would not be entitled through an Implementation Plan. As described in Chapter 2, *Project Description*, the HCP mandates that all fencing will leave openings between the fence mesh and the ground to allow for kit fox passage through the site. The entire perimeter would have fencing installed with a 4- to 6-inch clearance between the ground and bottom of the fence. Kit fox passage could be compromised if vegetation is planted along the entire fence perimeter. Therefore, a planted landscape buffer along the entire fence perimeter is not proposed as mitigation to reduce visual impacts because of the potential to affect and limit kit fox movement through the site. Avoiding impacts on kit fox, a federally protected species, outweighs avoidance of visual impacts, especially considering that the area immediately surrounding the site is currently largely undeveloped, open space grasslands that is suitable habitat for the kit fox. However, a landscape buffer can be limited to the solar project site border along SR 152 and designed to enable kit fox passage. Therefore, project-specific Mitigation Measure AES-1 would help reduce visual impacts on scenic highways to a less-than-significant level by implementing an attractive landscape buffer along SR 152 to screen views of the solar project, improving project aesthetics, and maintaining kit fox passage and views of the surrounding hillsides. Compared to the development proposed under the Community Plan, though, operation of the solar project would be less intensive than development of the Community Plan and preserve views toward the hillsides

within public scenic vista views. This is because the solar panels would be a lower profile than single- or multi-story residences and commercial uses. Regardless, the solar project would introduce an industrial land use with no landscaping in the view compared to a mixed-use development with landscaping. Therefore, the project would result in a new type of project-specific impact. Implementation of project-specific Mitigation Measure AES-1 would reduce significant impacts by implementing an attractive landscape buffer along SR 152 to screen views of the solar project, improving project aesthetics, and maintaining kit fox passage and views of the surrounding hillsides. Therefore, impacts from solar project operation would be less than significant with mitigation and would not exceed the significant and unavoidable impact identified in the Community Plan EIR. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure AES-1: Install landscape buffer along SR 152

Refer to Mitigation Measure AES-1 under Impact AES-1.

Decommissioning

Impacts on scenic routes resulting from decommissioning are similar to those described under Impact AES-1. The decommissioning plan would ensure that the project facilities are removed and that the site would be restored to pre-construction conditions to support, at a minimum, uses that are consistent with pre-construction activities such as cattle grazing or dry farming. Following restoration, the solar project site would look very much like it does presently. Therefore, impacts from solar project decommissioning would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Impacts on scenic routes resulting from operation are similar to those described under Impact AES-1. The portion of the solar project site outside of the Community Plan is approximately 561 acres and is currently used for agriculture. Development of this land was not considered in the Community Plan EIR. This is represented as the area with no land use designation type applied to it on Figure 3.11-1, which shows up as a grassland area on the figure, directly west of I-5. This area would be visible from designated scenic routes.

Construction

Impacts on scenic routes resulting from construction are similar to those described under Impact AES-1. Construction of the solar project would create temporary changes in views of and from the solar project site, including within scenic views toward the Diablo Range that are available from designated scenic routes including at the I-5 overcrossing with SR 152 and along SR 152 between I-5 and Hilldale Avenue, near the Apricot Hill Fruit Stand. Construction activities would be the same as described under *Changes in Proposed Land Uses and Development from the Community Plan* and would be seen as a continuation of the construction activities occurring within the Community Plan area when seen from scenic routes. This would include visible temporary construction facilities and construction traffic, which would be visible in the foreground and

middleground to roadway users on SR 152 and I-5. The project would create finished grade slopes no greater than 15 percent and would restore disturbed areas with stockpiled vegetative material stockpiled onsite, ensuring that the same vegetative grassland communities recolonize the site.

Roadway travelers on scenic routes are accustomed to seeing heavy machinery associated with agricultural operations, but viewers would not be accustomed to seeing intense and isolated construction activities on the site because construction operations of this scale are not common in this portion of the project vicinity. However, construction would not take place over an extended period of time, and visual changes resulting from construction are considered short-term and temporary. Therefore, impacts from solar project construction would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

The existing visual character of the solar project site outside of the Community Plan, which is visible from designated scenic routes, is also comprised of agricultural and open space land uses and is characterized by flat to gently rolling terrain. The overall existing visual quality is moderately high due to the scenic quality of the gently rolling, open space terrain that is backdropped by the surrounding hillsides, which contrasts against the adjacent flat valley floor east of the Delta Mendota Canal. In addition, there are relatively few anthropogenic features that detract from the overall quality of most views within the landscape, as seen in the existing views for KV 1 and KV 2 in Figures 3.1-2 and 3.1-3, respectively. The Billy Wright Landfill is visible from the I-5 overcrossing with SR 152, but it does not notably detract from the landscape and views from the scenic route because its mounding form blends with the hillsides beyond.

The solar project would introduce solar fields, or arrays, (making up the northeastern portion of the facilities' footprints, as shown on Figure 2-2) on much of the solar project site, gravel access roads, and 6- to 10-foot-high chain-link perimeter fencing with three-strand barbed wire that would be visible for 35 years from the foreground and middleground of views available to roadway travelers using designated portions of SR 152 and I-5.

The solar modules would be built the same as described under *Changes in Proposed Land Uses and Development from the Community Plan* and would be relatively low profile. The panels would be arranged in rows would create repetitive lines that would appear to be in straight lines when viewed in a 90-degree direction and looking directly north, east, south, or west toward the site or staggered diagonally when viewed in a 45-degree direction and looking directly northeast, northwest, southeast, or southwest toward the site. As illustrated in the simulation for KV 2 in Figure 3.1-3, the gently rolling terrain would make the linear pattern of the array slightly more pronounced, compared to installation on level ground, because viewers would be able to see the array pattern more clearly on the undulating terrain. Low-growing vegetation would be planted under and between the solar panels, helping to prevent dust. This would slightly improve aesthetics, compared to bare ground, by retaining a grassy groundcover.

The solar project would be visible from KVs 1 and 2 (Figures 3.1-2 and 3.1-3, respectively) and, although KV 2 depicts conditions within the Community Plan area, the conditions are consistent with how the solar project would look along SR 152 outside of the Community Plan area. From these vantages, the surrounding hillsides would largely remain visible above the solar facility. However, the foreground of the scenic views seen from the I-5 overcrossing with SR 152 and SR

152 between I-5 and Hilldale Avenue, near the Apricot Hill Fruit Stand, would include the blue or black solar panels and chain-link fencing of the solar facility that would alter the existing views of tan or green grassy fields. The solar array would distract from views of the hillsides in the middleground and background and degrade the visual quality of these views from the designated scenic routes.

The project substation, control room, and substation infrastructure would not be readily visible from portions of the designated scenic routes east and outside of the Community Plan area, due to distance and intervening terrain, suburban and commercial development along SR 152, and vegetation associated with development along SR 152. In addition, the new steel poles and gen-tie lines would parallel existing transmission lines and would look very similar to existing facilities near the Los Banos Substation. Therefore, it is not anticipated that these features would stand out in vantages with views of the solar project site outside of the Community Plan area, as seen in the simulation for KV 1 (Figure 3.1-2). The built containment structures associated with the PCS and BESS enclosures may be visible amongst the arrays from scenic routes. However, under the DC Option, the distributed BESS would be approximately 8 feet tall compared to the 13-foot-tall solar panels, decreasing the probability that the BESS would be visible. Terrain would also help to obscure views of the structures and equipment from certain vantage points. Nevertheless, operation of a solar PV power generation facility of this size would introduce a new source of infrastructure and anthropogenic features, which would constitute a visual intrusion to views from scenic routes, altering the existing rural visual character of the landscape and impairing foreground views associated with the hillsides beyond. It would be seen by viewers of moderate sensitivity and would reduce the existing scenic quality with the intrusion of human-made elements on land that is currently farmed and is largely undeveloped. The visual simulations indicate that the solar facility would impair the visual character of public scenic views, including views from designated scenic routes, toward the hillsides. Impacts are therefore presumed to be significant.

The changes to the existing visual character resulting from project operations and maintenance would reduce the overall visual quality of public views seen from scenic routes from moderately high to moderate. Mitigation would help reduce these impacts. However, given the size and location of the solar facility outside of the Community Plan area, as well as other constraints, feasible mitigation options are limited. As described in Chapter 2, *Project Description*, the HCP mandates that all fencing will leave openings between the fence mesh and the ground to allow for kit fox passage through the site. The entire perimeter would have fencing installed with a 4- to 6-inch clearance between the ground and bottom of the fence. Kit fox passage could be compromised if vegetation is planted along the entire fence perimeter. Therefore, a planted visual buffer along the entire fence perimeter is not feasible as mitigation to reduce visual impacts because of the potential to affect and limit kit fox movement through the site. Avoiding impacts on kit fox, a federally protected species, outweighs avoidance of visual impacts, especially considering that the area immediately surrounding the site is currently largely undeveloped open space grassland that is suitable habitat for the kit fox. However, a landscape buffer can be limited to the solar project site border along SR 152 and designed to enable kit fox passage. Project-specific Mitigation Measure AES-1 would help reduce visual impacts on views from scenic routes associated with the portion of the solar project located outside the Community Plan area to a less-than-significant level by implementing an attractive landscape buffer along SR 152 to screen views of the solar project, improving project aesthetics, and maintaining kit fox passage and views of the surrounding hillsides. Therefore, impacts from solar project operation would be less than significant with mitigation and would not exceed the significant and unavoidable impacts

identified in the Community Plan EIR. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure AES-1: Install landscape buffer along SR 152

Refer to Mitigation Measure AES-1 under Impact AES-1.

Decommissioning

Decommissioning and site reclamation of the solar project site would begin immediately after the 35-year lifespan of the solar project, expected in 2060. A decommissioning plan would ensure that the project facilities are decommissioned and removed and that the site would be restored to pre-construction conditions to support, at a minimum, uses that are consistent with pre-construction activities such as cattle grazing or dry farming. Following restoration, the solar project site would look very much like it does presently. Therefore, impacts from solar project decommissioning would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Off-Site Mitigation Site

Impacts on scenic routes resulting from changes at the off-site mitigation site are similar to those described under Impact AES-1. No major visual changes would be associated with the off-site mitigation site, and any minor visual alterations completed as part of ongoing maintenance would not degrade the existing visual character or quality of the site. Therefore, impacts from the off-site mitigation site would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Impacts on scenic routes resulting from changes at the PG&E substation site are similar to those described under Impact AES-1. The PG&E substation improvements would not be visible from I-5 but would be visible from SR 152. PG&E substation improvements would take approximately eight months to complete and would overlap with, but be considerably less extensive than, construction activities taking place at the solar project site. Therefore, substation improvements are likely to be perceived as part of the overall construction associated with the solar project site and not an independent construction project. PG&E AMM/BMP-1 would ensure that dust clouds do not disrupt views from SR 152 during construction.

As described in the *Environmental Setting*, the PG&E substation is an industrial-looking site that consists of a solid tan perimeter fence; many, tall, gray lattice steel structures within the fence; interconnected wires; and several enclosed structures. The substation is built on slightly higher terrain, and buildings within the solid perimeter fence cannot be seen from nearby residential and commercial areas, with the exception of one tall building can be seen rising above the fence to the north of the substation, along SR 152. In addition, the upper portions of the many lattice steel structures and wires can be seen from the designated scenic route. Lattice steel structures and wires

can also be seen converging on the substation from surrounding areas, with a heavier concentration of structures just outside the perimeter fence. The area outside the perimeter fence is grassy, with a few shrubs lining the south side of Gonzaga Road, which is also visible from SR 152.

The expanded perimeter fence line around the Los Banos Substation would not stand out to motorists traveling along SR 152 at normal highway speeds. New features constructed within this fencing in the southeast corner would be obscured by the perimeter fencing or would blend in with and not stand out amongst the existing utility infrastructure within the substation fencing. Similarly, features built just outside of the perimeter fence would also not stand out amongst the other existing utility features associated with the Los Banos Substation because the proposed features are in keeping with existing utilities. Most of the proposed features built within the perimeter fence are not expected to rise above the perimeter fence. However, where proposed features built within the perimeter fence may be visible rising above the substation perimeter fence, these features would be consistent with existing infrastructure at the substation and would not stand out or detract from views associated with the substation from SR 152. Tower raises on four of the existing PG&E towers are not likely to result in a noticeable change from SR 152 due to the number of tall towers that are already present in the landscape at and near this location. Therefore, impacts from the PG&E substation improvements would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, additional impacts would result from the solar project beyond those identified in the previous EIR and additional mitigation would be required. Impacts of development outside the Community Plan would also be significant. Implementation of project-specific Mitigation Measure AES-1 would reduce impacts to a less than significant level. Impacts from the PG&E substation improvements and off-site mitigation site would be less than significant. Impacts from the off-site residential redesignation would remain significant and unavoidable, consistent with the Community Plan EIR conclusion. Therefore, when considering the project as a whole, impacts would be significant and unavoidable, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Impact AES-3: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area? (With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.)

Impacts Identified in the Previous EIR

The Community Plan EIR identified that impacts to light and glare resulting from buildout of the Community Plan would be significant and unavoidable because the existing site did not generate any significant sources of light, glare, or light trespass into the night sky and the proposed urban development project would require lighting of roadways, parks, schools, and other facilities. These changes would result in a substantial increase in the amount of nighttime light and glare and result in sky glow that would affect views of the night sky. Refer to the discussion under Impact 5.10-4 on pages 5.10-18—5.10-19 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR determined that implementation of Mitigation Measure 5.10-4, which requires

development projects to incorporate lighting and finishing requirements and Implementation Plans to include design guidelines, would not fully reduce this impact (County of Merced 2007 and 2008a), and therefore concluded that the impact would be significant and unavoidable.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

As described under Impact AES-1, although the proposed off-site residential redesignation would not result in the direct construction of the residential development, it would allow the County to maintain medium-density/high-density residential development capacity for future development by redistributing the already approved medium-density/high-density residential capacity to a different area within the Community Plan area and increasing the planned medium/high density within the residential redesignation area.

The solar project would require amendments to the General Plan and Community Plan to create a Utility-Scale Solar Overlay and the off-site residential redesignation area. The potential environmental impacts to the changes in light and glare that could result from construction and operation of the solar project are evaluated below.

Under the proposed project, development at the off-site residential redesignation area could still occur, but be at a higher density. A high-density/medium-density residential use of the off-site residential redesignation area instead of a low-density residential use would not change this conclusion, as the same lands would be disturbed. As determined by conducting a desktop review of the project site and evaluating the existing conditions of photographs taken on July 1, 2021 for the simulations, conditions at and around the redesignation area have not changed since certification of the Community Plan EIR in a way that would change its visual impacts analysis, as there are no new publicly accessible vantage points from which the project site and its surroundings can be viewed, have there been no material changes to the viewshed from existing vantage points, and there have been no new notable sources of light or glare in the area.

Although the higher density development would be shifted slightly to the south as a part of the proposed off-site residential redesignation, development occurring at the off-site residential redesignation area would result in the same light and glare impacts as described for the Villages of Laguna San Luis in its approved location. This is because any such development is expected to result in a similar level of light and glare, because multi-family homes would occupy a similar area of land as single-family houses. However, multi-family homes tend to have more stories – and therefore more windows – than single-family homes. It is expected that multi-family homes would have window treatments, like single-family homes, to limit the amount of light radiating out from residential windows. This would ensure that light radiating out from multi-family homes does not substantially differ from light and glare impacts as described for the Villages of Laguna San Luis. Further, it is expected that roadway, landscaping, and exterior building lighting would also be very similar because these features would be lit in the same fashion and with similar lighting levels if it were designed to be a single-family development. Lastly, it is expected that moving the development further back from SR 152 and I-5 would help reduce light and glare levels seen from these scenic routes at night and the amount of light and glare seen in the foreground of scenic vista views seen from these roadways at dawn and dusk. Therefore, impacts from the off-site residential redesignation would remain significant and unavoidable, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

Construction of the solar project would create temporary changes in views of and from the project site. Construction activities would introduce considerable heavy equipment and associated vehicles, including backhoes, compactors, tractors, and trucks into the viewshed of all viewer groups. The solar project site boundaries would cover approximately 1,741 acres of land. Construction activities would disturb approximately 1,287 acres of the solar project site. Construction would be expected to take place over 14 months, 6 days per week from 7:00 a.m. to 6:00 p.m., Monday through Saturday. Evening work is not proposed but may be needed if work falls behind schedule and delivery offloads, panel laying, and cable laying and termination may extend past the typical daily end time of 6:00 p.m. Construction occurring past daylight hours, which varies by season, could require the use of high-intensity lighting to illuminate construction activities that occur in the dark. While construction would be temporary, visual effects would be adverse because of close proximity to residential viewers that are highly sensitive and because major construction is not a common visual element.

Implementation of solar project-specific Mitigation Measure AES-3 would reduce construction impacts to a less-than-significant level. Therefore, impacts from solar project construction would be less than significant with mitigation and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure AES-3: Limit construction to daylight hours near residences

The project proponent shall ensure that the construction contractors limit construction to daylight hours near residences. Although construction activities are allowed to occur between 7:00 a.m. and 6:00 p.m., per the Merced County Code Section 18.41.07, no construction activities that require high-wattage lighting sources to operate in the dark should continue past daylight hours (which vary according to season) within 0.5 mile of residences. This will reduce the amount of construction effects experienced by viewer groups because most construction activities would be taking place during business hours (when most viewer groups are likely at work) and eliminate the need to introduce high-wattage lighting sources to operate in the dark.

Operation

The project site is currently flat to gently rolling grasslands and is devoid of lighting sources from the solar site interior. The northern portion of the solar project site receives lighting from exterior locations such as lit buildings and street lighting associated with the commercial and residential development that is located along SR 152. Very minor sources of light are present from adjacent rural residences that are located south of the solar project site. Lighting coming from vehicles passing on SR 152, I-5, and smaller local streets also contribute to minor lighting along the solar project site's northern, eastern, and southern boundaries. However, if the Villages of Laguna San Luis is built, lighting in the project vicinity would substantially increase.

The solar project would include low-level security and wayfinding lighting at entry and egress gates and at strategic locations along the perimeter fence line of the solar project substation. The lighting would be used from dusk to dawn and would be downwards cast and shielded. Project lighting would be directed downward onto the site and would be shielded to illuminate only

intended areas. The project's substation would be lit to a minimum of 22 lux or 2 footcandles. These lighting measures would reduce the amount of light trespass falling outside the boundaries of the project site. While there may still be small amounts of spillover lighting that may occur, this is not expected to affect residences because they are not located immediately adjacent to areas of the project site that would be lit.

There are currently only minor sources of daytime glare at the site. The proposed solar project would introduce a new source of potential glare to the area. However, because light absorption, rather than reflection, is critical to a solar PV panel's production of electricity, panels are designed to maximize absorption and minimize reflection. The panels would be dark blue or black and covered with anti-reflective coatings. PV panels are designed with a microscopically irregular surface designed to absorb as much light as possible, which both increases the efficiency of the project and reduces reflection and glare. Modern PV panels reflect less than 3 percent of incoming sunlight (Anurag et al. 2017). However, glare that is comparable to that coming off of flat water can still result, but this would not be a hazard for aircraft (Riley and Olson 2011). In addition, solar panels direct most of the residual reflection skyward. Therefore, it is anticipated that any reflection from the PV panels would very likely be directed above a terrestrial viewer's line of sight.

The PV modules would be installed in rows that run north-south and use a tracking system that follows the sun in its path from east to west across the sky as the day progresses. Individual PV panels would be oriented to face in a southerly direction to maximize solar gain. When the sun is high in the sky (close to noon or in the summer) and the panel is low to the ground, any reflection would be upward toward the light source and back into the atmosphere away from terrestrial-based receptors. When the sun is low on the horizon (near dawn or dusk or in the winter), the sun's angle in the sky is low; reflected rays would still be directed away from terrestrial-based receptors because the maximum downward angle of the arrays would not be below 30 degrees.

In some locations, the site's gently rolling terrain would help to limit glare from the project site by obscuring views of the panels, such as seen in the simulation for KV 3 (Figure 3.1-4), along Billy Wright Road. The rolling terrain also has the ability to increase glare resulting from the project because the slopes would expose more panel faces and, essentially, create variable facets for the sun to reflect off of compared to a flat installation that generally creates one uniform facet (i.e., a uniform and even panel orientation), as seen in the simulations for KV 1 and KV 2 in Figures 3.1-2 and 3.1-3, respectively. However, as described above, residents, recreationists, and roadway travelers in close proximity to the panels are unlikely to experience glare because reflected rays would not be below 30 degrees and would pass well above their line of sight. Further, potential impacts of any glare on recreationists and roadway travelers would be limited by the fact that these viewers would be transiting through the project site only for a few moments.

Existing suburban residences north of the project site are fixed and have long-term, permanent views of the proposed site. The glare impact on these residences is expected to be less than significant because the PV panel arrays would track east-west and would not face the residences. As described above, the PV panel systems position the arrays so that the sun's rays are perpendicular to the panel, and light reflected from the panel would be reflected back toward the sun. The maximum downward angle of the panels would not be below 30 degrees. Therefore, even when the sun angle is low, the reflected sunlight would be directed away from residential receptors. In addition, the landscape buffer would prevent glare from reaching residential receptors. For rural residences to the south, the glare impact is also expected to be less than significant because the east-west tracking and terrain would prevent glare from being an issue.

While a solar generating station was not anticipated in the Community Plan and its EIR, as described above, no new significant light and glare impacts result from operation of the proposed solar project. Furthermore, the solar project would not be required to implement Mitigation Measure 5.10-4 because it is not a development project, and it would not be entitled through an Implementation Plan. Impacts from solar project operation would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. Therefore, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

The decommissioning plan would ensure that the project facilities are removed and that the site would be restored to pre-construction conditions to support, at a minimum, uses that are consistent with pre-construction activities such as cattle grazing or dry farming. Following restoration, the solar project site would look very much like it does presently. Sources of light and glare would be reduced because there would be no sources of artificial lighting or features to reflect light and create glare. Therefore, impacts from solar project decommissioning would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Construction

Changes in light and glare from construction activities would be the same as described under *Changes in Proposed Land Uses and Development from the Community Plan* and would be seen as a continuation of the construction activities occurring within the Community Plan area. Construction of the solar project, including the portion outside the Community Plan area, would create temporary changes in views of and from the project site and introduce considerable heavy equipment and associated vehicles into the viewshed of all viewer groups. Construction would be expected to take place over 14 months, 6 days per week from 7:00 a.m. to 6:00 p.m., Monday through Saturday. Evening work is not proposed but may be needed if work falls behind schedule and delivery offloads, panel laying, and cable laying and termination may extend past the typical daily end time of 6:00 p.m. Construction occurring past daylight hours, which varies by season, could require the use of high-intensity lighting to illuminate construction activities that occur in the dark. While construction would be temporary, visual effects would be adverse because of close proximity to residential viewers that are highly sensitive and because major construction is not a common visual element.

Implementation of project-specific Mitigation Measure AES-3 would reduce construction impacts to a less-than-significant level. Therefore, impacts from solar project construction would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure AES-3: Limit construction to daylight hours near residences

Refer to Mitigation Measure AES-3 above.

Operation

The solar modules would be built the same as described under *Changes in Proposed Land Uses and Development from the Community Plan*, and impacts resulting from changes in light and glare during operation would be similar to those described in that section. The solar project site outside of the Community Plan area is flat to gently rolling grasslands and is devoid of lighting sources from the solar site interior. This portion of the solar project site is primarily seen by roadway travelers on SR 152, I-5, and Billy Wright Road and only receives lighting from street lighting associated with the I-5/SR 152 interchange and light coming from vehicles passing on SR 152, I-5, and Billy Wright Road.

The solar project would include low-level security and wayfinding lighting at entry and egress gates and at strategic locations along the perimeter fence line of the solar project substation. The lighting would be used from dusk to dawn and would be downwards cast and shielded. Project lighting would be directed downward onto the site and would be shielded to illuminate only intended areas. While there may still be small amounts of spillover lighting that may occur, this is not expected to affect roadway travelers because they would be approximately 115 feet or more away from the fence line and areas of the project site that would be lit.

There are currently only minor sources of daytime glare at the site. The proposed solar power plant would introduce a new source of potential glare to the area. However, as described under *Changes in Proposed Land Uses and Development from the Community Plan*, the PV panels are designed to absorb as much light as possible, which both increases the efficiency of the project and reduces reflection and glare. Modern PV panels reflect less than 3 percent of incoming sunlight (Anurag et al. 2017). However, glare that is comparable to that coming off of flat water can still result, but this would not be a hazard for aircraft (Riley and Olson 2011). In addition, solar panels direct most of the residual reflection skyward. Therefore, it is anticipated that any reflection from the PV panels would likely be directed above a terrestrial viewer's line of sight.

The PV modules would be installed in rows that run north-south and use a tracking system that follows the sun in its path from east to west across the sky as the day progresses. Individual PV panels would be oriented to face in a southerly direction to maximize solar gain. When the sun is high in the sky (close to noon or in the summer) and the panel is low to the ground, any reflection would be upward toward the light source and back into the atmosphere away from terrestrial-based receptors. When the sun is low on the horizon (near dawn or dusk or in the winter), the sun's angle in the sky is low; reflected rays would still be directed away from terrestrial-based receptors because the maximum downward angle of the arrays would not be below 30 degrees.

In some locations, the site's gently rolling terrain would help to limit glare from the project site by obscuring views of the panels, such as seen in the simulation for KV 3 (Figure 3.1-4), along Billy Wright Road. The rolling terrain also has the ability to increase glare resulting from the project because the slopes would expose more panel faces and, essentially, create variable facets for the sun to reflect off of compared to a flat installation that generally creates one uniform facet (i.e., a uniform and even panel orientation), as seen in the simulations for KV 1 and KV 2 in Figures 3.1-2 and 3.1-3, respectively. However, as described above roadway travelers in close proximity to the panels are unlikely to experience glare because reflected rays would not be below 30 degrees and would pass well above their line of sight. Further, potential impacts of any glare on roadway travelers would be limited by the fact that these viewers would be transiting through the project site only for a few moments.

While a solar generating station was not anticipated in the Community Plan and its EIR, as described above, no new significant light and glare impacts result from operation of the proposed solar project. Therefore, impacts from solar project operation would be less than significant and would

not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

The decommissioning plan would ensure that the project facilities are removed and that the site would be restored to pre-construction conditions to support, at a minimum, uses that are consistent with pre-construction activities such as cattle grazing or dry farming. Following restoration, the solar project site would look very much like it does presently. Sources of light and glare would be reduced because there would be no sources of artificial lighting or features to reflect light and create glare. Therefore, impacts from solar project decommissioning would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Off-Site Mitigation Site

There would be no changes in daytime or nighttime light and glare at the off-site mitigation site. This is because no new sources of nighttime lighting would be introduced at the site. In addition, minor visual alterations completed as part of ongoing maintenance would not introduce any substantial structures or features that would increase daytime or nighttime glare at the site. Therefore, impacts from the off-site mitigation site would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Impacts on the existing visual character and quality resulting from changes at the PG&E substation site are similar to those described under Impact AES-1. PG&E substation improvements would take approximately eight months to complete and would overlap with construction activities taking place at the solar project site. Therefore, substation improvements are likely to be perceived as part of the overall construction associated with the solar project site and not an independent construction project when seen from surrounding local roadways, the OHV Recreation Area, and nearby residential and commercial areas. PG&E AMM/BMP-18 would ensure that any nighttime lighting used for construction is placed and shielded to minimize nighttime glare to surrounding viewers.

The expanded perimeter fence line around the Los Banos Substation would not create a new source of glare because the change in the amount of solid perimeter fencing to reflect light would be nominal. New features constructed within this fencing would be largely obscured by the perimeter fencing and would not result in a substantial new source of light or glare. Similarly, features built just outside of the perimeter fence and the tower raises would be made of the same materials, have the same coloring, and would blend with other existing utility features associated with the Los Banos Substation and would not result in a substantial new source of light or glare. Therefore, impacts from the PG&E substation improvements would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, additional impacts would result from the solar project beyond those identified in the previous EIR, and additional mitigation would be required. Impacts of development outside the Community Plan boundary would also be significant. Implementation of project-specific Mitigation Measure AES-3 would reduce impacts to a less-than-significant level. Impacts from the PG&E substation improvements and off-site mitigation site would be less than significant. Impacts from the off-site residential redesignation would remain significant and unavoidable, consistent with the Community Plan EIR conclusion. Therefore, when considering the project as a whole, impacts would be significant and unavoidable, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

3.1.4 References Cited

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3.2 Agricultural and Forestry Resources

This section identifies and evaluates the project's potential impacts on agricultural and forestry resources. It also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level; potential impacts associated with the off-site General Plan amendment are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. Comments related to agriculture included a suggestion that a deed restriction be placed on the solar plant site in order to return it to agricultural production at the end of its operational lifespan and, should the solar panels be permanent, a suggestion that the loss of agricultural soil be mitigated through purchase of an agricultural conversion easement elsewhere in the county. Other comments related to dust control measures and fugitive water control are addressed in Section 3.10, *Hydrology and Water Quality*. Concerns related to pest control are not covered by the California Environmental Quality Act (CEQA) and, therefore, are not addressed in this SEIR.

Pursuant to Public Resources Code Section 21061 and CEQA Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.2.1 Existing Conditions

Environmental Setting

Regional Setting

Merced County, which is in California's Central Valley, includes the cities of Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced within its approximately 1,980 square miles. Agricultural operations are a key part of the county's economy. As of 2020, Merced County was ranked as the fifth most productive agricultural county in California, up from sixth in 2019, with the gross value of agricultural production being approximately \$3.56 billion (California Department of Food and Agriculture 2021). Leading commodities in 2020 were milk, almonds, chickens (broilers), and sweet potatoes (California Department of Food and Agriculture 2021). Merced County contains a large amount of land that has been identified as Prime Farmland, as defined by the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP). The FMMP

reported that, in 2016, there were approximately 1.15 million acres of agricultural land in Merced County (approximately 95.8 percent of the county's total acreage). This includes approximately 269,243 acres of Prime Farmland, 154,502 acres of Farmland of Statewide Importance, 115,235 acres of Unique Farmland, 61,671 acres of Farmland of Local Importance, and 552,632 acres of Grazing Land (California Department of Conservation 2020).

In general, there has been a trend in California toward the conversion of all types of farmland to urban or other uses. Since 1982, when California began inventorying its farmland, 1.5 million acres of agricultural land has been converted or removed from agricultural use. Farmland conversion in Merced County has followed this trend. Between 2014 and 2016, the county lost approximately 2,671 acres of Prime Farmland, 293 acres of Farmland of Statewide Importance, 553 acres of Farmland of Local Importance, and 4,333 acres of Grazing Land; it gained 2,935 acres of Unique Farmland (California Department of Conservation 2020).

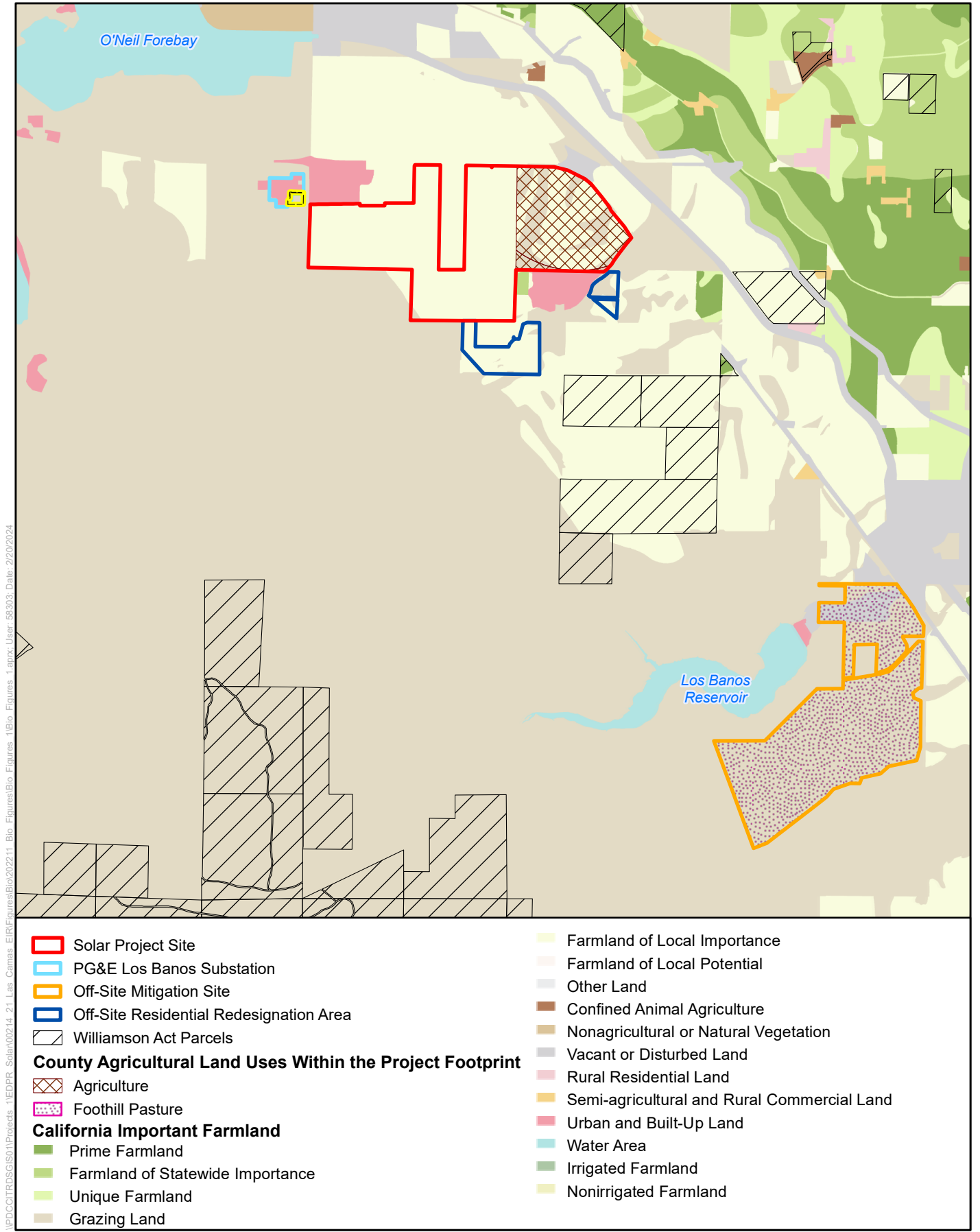
Solar Project Site

The solar project site is on approximately 1,741 acres of vacant, undeveloped land in an unincorporated part of the county at the southwest corner of the intersection of State Route (SR) 33/SR 152 and Interstate 5 (I-5). The solar project site comprises predominantly undeveloped non-native annual grassland, with a topography that is mostly flat or gently rolling (average slope of 4.9 percent). Elevation on the solar project site ranges from approximately 220 feet above sea level at the lowest point to 558 feet at the highest point. The steeper slopes are near the southwest corner of the solar project site and along a riverine feature in the southern portion of the site. According to the 2019 mapping data from the California Department of Forestry and Fire Protection (CAL FIRE), the project site does not contain any forest or woodland cover (California Department of Forestry and Fire Protection 2019).

The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming. A review of aerial imagery dating back to 1998 shows a history of various crop types over much of the project site. In 1998, the aerial imagery indicates that tree orchards were dominant, but this changed to dry farming practices sometime prior to 2004. Since 2004, aerial imagery shows dry farming as the dominant agricultural practice. By 2018, aerial imagery shows that the extent of dry farming on the project site had been reduced by an estimated 50 percent. Based on a review of aerial imagery, no changes to existing land use or new development have occurred within the Community Plan area since certification of the Community Plan EIR.

The FMMP identified agricultural lands within the solar project site. As shown in Table 3.2-1, the solar project site includes approximately 1,511.26 acres of Farmland of Local Importance (86.81 percent) and 224.88 acres of Grazing Land (12.92 percent). The majority of the solar project site is zoned for non-agricultural uses (67.79 percent); a smaller portion is zoned for agriculture (32.21 percent). None of the parcels that compose the solar project site are currently subject to Williamson Act contracts. Figure 3.2-1 illustrates the distribution of FMMP Farmlands on the solar project site and in the surrounding areas.

As described in Section 3.7, *Geology, Soils, and Paleontological Resources*, the solar project site is underlain by a variety of soil types. These include Los Banos clay loam, Apollo clay loam, Damluis clay loam, O'Neil silt loam, San Timoteo-Wisflat sandy loams complex, Ballvar loam, and Ayar clay.



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1:80,000

Source: California Department of Conservation, 2022; Merced County, 2022

**Figure 3.2-1
Farmland Classifications**

Table 3.2-1. FMMP Acreage at the Solar Project Site

Solar Project Site	Acres	Percent
Total Area	1,740.80	100.00%
<i>Farmland Categories</i>		
Unique Farmland	0.055	0.00%
Farmland of Statewide Importance	0.02	0.00%
Farmland of Local Importance	1,511.26	86.81%
Grazing Land	224.88	12.92%
Total	1,736.22	99.74%
Other Categories		
Vacant or Disturbed Land	0.65	0.04%
Urban and Built-Up Land	3.93	0.23%
Total	4.58	0.26%
<i>Agricultural Land Use Categories (County Zoning)</i>		
Agricultural	560.67	32.21%
Total	560.67	32.21%
Other Categories		
Non-Agricultural (business park, commercial, residential, etc.)	1,180.13	67.79%
Total	1,180.13	67.79%

Source: California Department of Conservation, 2022; County of Merced, 2022

The Natural Resources Conservation Service (NRCS) assigns land capability classes to soils to describe their potential productivity for agricultural use (Natural Resources Conservation Service 2007). These range from Class 1 soils, which have few limitations that restrict their use, to Class 8 soils, which have limitations that preclude commercial plant production. As shown in Figure 3.2-2, *Land Capability Classes*, the vast majority (94.77 percent) of the soils underlying the solar project site are Class 4. These have very severe limitations that reduce the choice with respect to plants or require very careful management, or both. A small percentage of Class 6 soils (4.33 percent) and Class 7 soils (0.90 percent) also underlie the solar project site. These classifications have even greater limitations compared with Class 4.

PG&E Substation

The existing PG&E Los Banos Substation site covers approximately 47 acres of land west of a residential subdivision and RV park, approximately 0.2 mile from the solar project site. As described in Section 3.7, *Geology, Soils, and Paleontological Resources*, the primary soil units underlying the substation site are Ballvar loam and Damluis clay loam. As shown in Figure 3.2-2, *Land Capability Classes*, the substation site is underlain by Class 4 soils.

The FMMP identified a small amount of Grazing Land within the footprint; however, the substation area is fenced off, and the majority of the area is developed. As shown in Table 3.2-2, the substation site includes approximately 41.37 acres of Urban and Built-Up Land (86.39 percent) and 6.5 acres of Grazing Land (13.61 percent). The entirety of the substation site is zoned for non-agricultural uses, and none of the parcels that compose the substation site are currently subject to Williamson Act contracts.

Table 3.2-2. FMMP Acreage at the PG&E Substation Site

PG&E Substation	Acres	Percent
Total Area	47.88	100.00%
<i>Farmland Categories</i>		
Grazing Land	6.52	13.61%
Total	6.52	13.61%
Other Categories		
Urban and Built-Up Land	41.37	86.39%
Total	41.37	86.39%
<i>Agricultural Land Use Categories (County Zoning)</i>		
N/A		
Other Categories		
Non-Agricultural (business park, commercial, residential, etc.)	47.88	100.00%
Total	47.88	100.00%

Source: California Department of Conservation, 2022; County of Merced, 2022

Off-Site Mitigation Site

The off-site mitigation site is on approximately 1,498 acres of undeveloped land 5 miles south of the solar project site. It consists of grassland habitat and is currently used for grazing. As described in Section 3.7, *Geology, Soils, and Paleontological Resources*, the primary soil units underlying the off-site mitigation site are Los Banos clay loam and Arburua loam.

The FMMP identified agricultural lands within the off-site mitigation site. As shown in Table 3.2-3, the off-site mitigation site includes approximately 1,309.65 acres of Grazing Land (92.82 percent) and 107.54 acres of Urban and Built-Up Land (7.18 percent). The off-site mitigation site is zoned Foothill Pasture, and none of the parcels that compose the site are currently subject to Williamson Act contracts.

The County establishes agricultural preserve land as a prerequisite for landowners to enter into a Williamson Act contract with the County, as described below in *Regulatory Setting*. All (100 percent) of the off-site mitigation site is comprised of agricultural preserve land.

Off-Site Residential Redesignation Area

The off-site residential redesignation area is south of the solar project site on approximately 202.8 acres of undeveloped grassland within the Villages at Laguna San Luis Community Plan area. As described in Section 3.7, *Geology, Soils, and Paleontological Resources*, the primary soil units underlying the off-site residential redesignation area are the same as those identified and described for the solar project site. As described in Section 3.11, *Land Use and Planning*, the off-site residential redesignation area is designated as Low Density Residential in the Community Plan and zoned as Single-Family Residential in the county Zoning Code. None of the parcels that compose the site are currently subject to Williamson Act contracts. Based on a review of aerial imagery, no changes to existing land use or new development have occurred within the Community Plan area since certification of the Community Plan EIR.

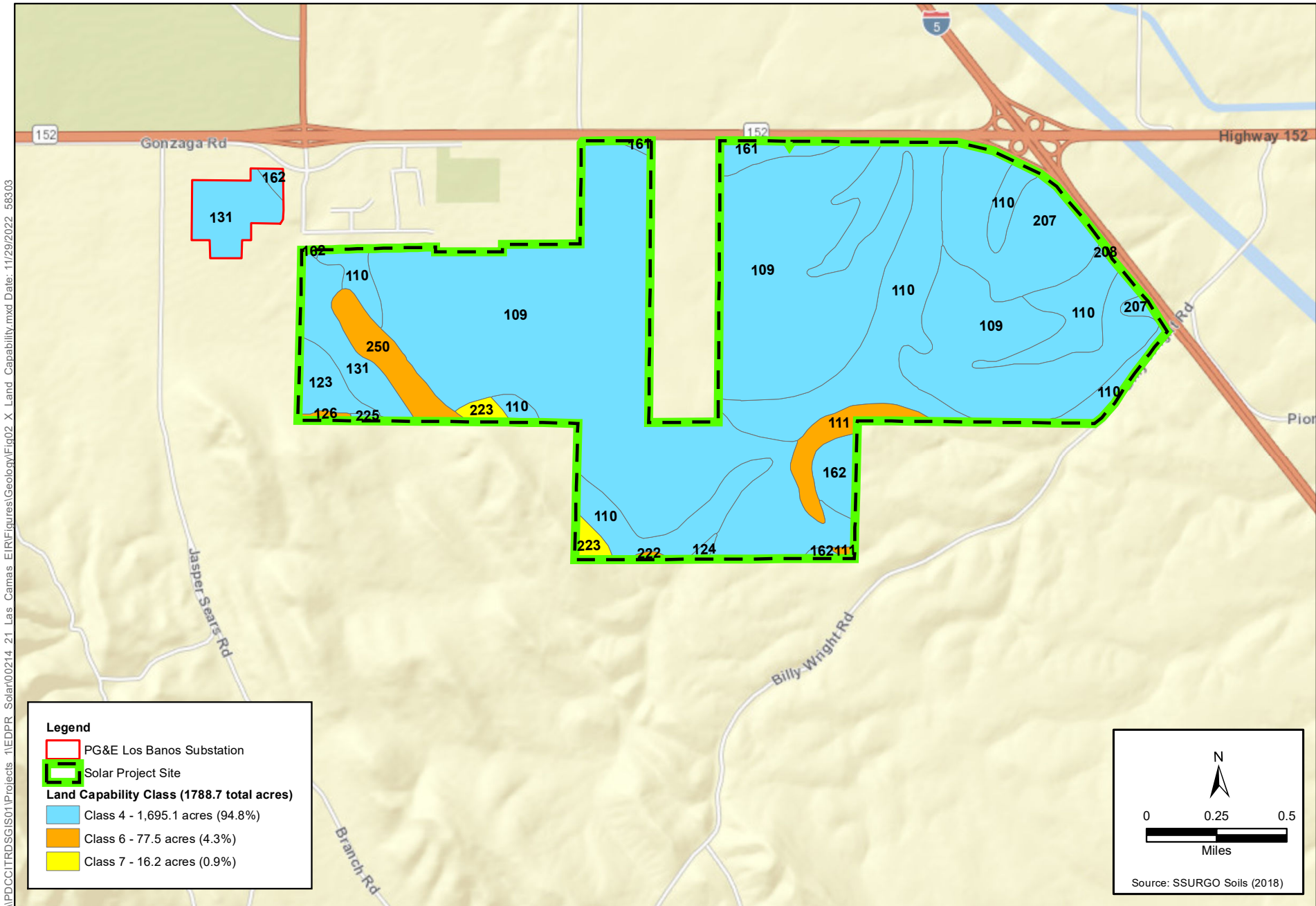


Figure 3.2-2
Land Capability Classes

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Table 3.2-3. FMMP Acreage at the Off-Site Mitigation Site

Off-Site Mitigation Site	Acres	Percent
Total Area	1,498.19	100.00%
<i>Farmland Categories</i>		
Grazing Land	1,390.65	92.82%
Total	1,390.65	92.82%
<i>Other Categories</i>		
Urban and Built-Up Land	107.55	7.18%
Total	107.55	7.18%
<i>Agricultural Land Use Categories (County Zoning)</i>		
Agricultural	0.07	0.00%
Foothill Pasture	1,498.05	99.99%
Total	1,498.12	100.00%
<i>Other Categories</i>		
Non-Agricultural (business park, commercial, residential, etc.)	0.072	0.00%
Total	0.072	0.00%

Source: California Department of Conservation, 2022; County of Merced, 2022

The FMMP identified agricultural lands within the off-site residential redesignation area. As shown in Table 3.2-4, the off-site residential redesignation area includes approximately 166.69 acres of Farmland of Local Importance (82.20 percent) and 36.09 acres of Grazing Land (17.80 percent).

Table 3.2-4. FMMP Acreage at the Off-Site Residential Redesignation Area

Off-Site Residential Redesignation Area	Acres	Percent
Total Area	202.8	100.00%
<i>Farmland Categories</i>		
Farmland of Local Importance	166.69	82.20%
Grazing Land	36.09	17.80%
Total	202.78	100.00%
<i>Other Categories</i>		
N/A		
<i>Agricultural Land Use Categories (County Zoning)</i>		
Agricultural	0.09	0.09%
Total	0.09	0.09%
<i>Other Categories</i>		
Non-Agricultural (business park, commercial, residential, etc.)	202.67	99.95%
Total	202.6	99.95%

Source: California Department of Conservation, 2024; County of Merced, 2024

Regulatory Setting

State

Williamson Act

The California Land Conservation Act of 1965 (Government Code Section 51200, et seq.), also known as the Williamson Act, protects farmland from conversion to other uses by offering owners of agricultural land a property tax incentive to maintain their land in agricultural use. Under the Williamson Act, the landowner contracts with the county or city in which their property is located, promising to maintain the land in agriculture or a compatible use for a minimum period of 10 years. In return, the property tax on the land is based on its productive value rather than its assessed valuation. A Williamson Act contract automatically renews each year so that it is always 10 years in duration. Enrollment in a Williamson Act contract is voluntary.

The Williamson Act program is administered locally. The County of Merced (County) is a party to and enforces the contracts on lands within its unincorporated area. The California Department of Conservation has a limited oversight role. There are two methods by which a Williamson Act contract may be terminated. The first and preferred method is through non-renewal. The landowner can file a notice of non-renewal with the County, and the contract will expire 10 years from that time. The second method is cancellation. The landowner can petition for cancellation of the contract and, if the County Board of Supervisors agrees to the cancellation, the County will make certain mandatory findings of fact related either to the cancellation's consistency with the Williamson Act or to its being "within the public interest." At that time, the contract is cancelled immediately. A penalty for early termination is levied on the landowner whenever a cancellation is approved.

No part of the project site is currently subject to Williamson Act contracts.

Farmland Mapping and Monitoring Program

The FMMP is a non-regulatory program of the California Department of Conservation that inventories the state's farmlands and tracks the conversion of farmland to other land uses. The FMMP publishes reports of mapped farmland and conversions every 2 years. The FMMP categorizes farmland on the basis of its soil quality, the availability of irrigation water, current use, and slope, among other criteria. The following are the categories of farmland identified in the FMMP:

- **Prime Farmland.** Farmland with the best combination of physical and chemical features and able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture 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.** Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil 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 with 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.

- **Farmland of Local Importance.** Land of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land.** Land on which the existing vegetation is suited to the grazing of livestock. This category 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.

Local

Merced County General Plan

The General Plan is the County's constitution for land use. It sets out the pattern of future land use within the unincorporated areas, including, among other things, agricultural lands, areas with existing communities, and areas for future planned communities. The County values its agricultural land. This is reflected in the goals and policies of the General Plan, which are protective of agriculture's important physical and economic presence in the county.

The off-site mitigation site is designated as Foothill Pasture by the *2030 Merced County General Plan, Land Use Element*. This land use designation is applied when the land is subject to "non-cultivated agricultural practices that typically require larger areas of land due to soil quality, limited water availability, and steeper slopes." The solar project site, off-site residential redesignation area, and PG&E substation are located in the *Villages of Laguna San Luis Community Plan* (Merced County 2008), as discussed below.

Pertinent policies for the proposed solar farm include the following:

- **Policy LU-2.2:** Foothill Pasture Designation. Apply the Foothill Pasture land use designation on agricultural and open space lands located on the eastern and western edges of the county, which are recognized for their value as grazing, cropland, and open space.
- **Policy LU-2.3:** Land Use Activity Limitations. Limit allowed land use within Agricultural and Foothill Pasture areas to agricultural crop production, farm support operations, and grazing and open space uses.
- **Policy LU-2.5:** Agricultural Support Facilities. Allow consideration of locating characteristically specific commercial and industrial uses in rural areas in limited cases, based on the unique nature of the use and for health and safety reasons, which require a location on large parcels or in sparsely populated areas. In addition, consider the following criteria during the Conditional Use Permit review process:
 - a. The use requires a location in a rural area because of one or more of the following characteristics: unusual site area requirements, natural resource production purposes, being directly agriculturally related, or specific operational characteristics that pose a health or safety problem for urban populations.
 - b. The use is located near or readily accessible to a probable work force.
 - c. The use is consistent with the intent and policies of the Agricultural, Natural Resources, and Health and Safety Elements.
 - d. The use will not significantly affect adjacent agricultural, recreational, natural, cultural, or wildlife areas or other identified Natural Resources Element.

- e. The use is protected from hazards identified in the Health and Safety Element.
 - f. The use is not located on productive agricultural land when nonproductive agricultural land is available in the vicinity of the proposed project.
 - g. The use is limited in size, time of operation, or length of permit authority where necessary to ensure compatibility with adjacent land uses.
 - h. The use shall not have a detrimental effect on surface or groundwater resources.
 - i. The use shall provide adequate infrastructure and improvements to reduce impacts on County services.
 - j. The use shall have access to adequate transportation facilities without creating abnormally high traffic volumes and shall provide road improvements to mitigate impacts generated by the project.
- **Policy LU-2.7: Rural Energy Production.** Allow the development of ethanol production, co-generation, solar, and wind facilities in Agricultural and Foothill Pasture areas that produce renewable energy, support agriculturally related industries, and/or use agricultural waste, provided that such uses do not interfere with agricultural practices or conflict with sensitive habitats or other biological resources.

The Agriculture Element of the *2030 Merced County General Plan* includes the following pertinent goal and policy:

- **Goal AG-2.** Ensure the long-term preservation and conservation of land used for productive agriculture, potentially productive agricultural land, and agricultural support facilities.
- **Policy AG-2.2: Agricultural Land Mitigation.** Protect productive agricultural areas from conversion to non-agricultural and urban uses by establishing and implementing an agricultural mitigation program that matches acres converted with farmland acres of similar quality to those converted preserved at a 1:1 ratio. Coordinate with the six cities in Merced County and the Merced Local Agency Formation Commission, consistent with the commission's statutory mission to preserve agricultural land and open space and establish consistent standards and mitigation for the loss of farmland. In addition, the Land Evaluation and Site Assessment Model may be used to determine whether the conservation land is of equal or greater value than the land being converted.

"Productive farmland" is defined in the *2030 Merced County General Plan* as "farmland that has received water supplies in three of the prior 10 years and is classified as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland on the Statewide Important Farmland Map."

- **Policy AG-3.11: Solar and Wind Energy Production Facilities.** Encourage the installation of solar and wind energy production facilities in agricultural areas so long as they do not result in a tax burden to the County, do not result in permanent water transfers of productive agricultural land or do not require cancellation of Williamson Act contracts, and do not conflict with sensitive habitats or other biological resources. In addition, approval of such facilities shall require dedications of agricultural land and habitat mitigation when impacts on these resources have been determined to be significant pursuant to CEQA, measures to control erosion, and assurances for financing decommissioning activities.

Villages of Laguna San Luis Community Plan

The Villages of Laguna San Luis Community Plan (Community Plan) was adopted in September 2008 and provides a long-range growth and development plan for approximately 6,200 acres located west of I-5 along SR 152 and SR 33 in western Merced County. The Community Plan includes policies and guidance for the establishment of a new community that can accommodate growth and market demands, all while ensuring adequate public services, facilities, recreational space, and compatibility with the surrounding environment.

The community plan includes the following implementation measure applicable to agriculture:

- **Policy 4.B.2.** Minimize conflicts between development and agricultural operations through the use of buffer areas or larger lots along the edge of the CP.
- **Implementation Measure 4.B.2.a.** Prepare an Agriculture Compatibility Plan for all development adjacent to cultivated crops, orchards and vineyards on the edge of the Villages SUDP [Specific Urban Development Plan].
- **Policy 5.B.3.** Utilize the General Plan Land Use and Agricultural Chapter policies in the evaluation of any proposals to expand the Villages CP or to propose other urban centers adjacent to the CP.
- **Policy 2.A.2.** Plan and design a reclaimed water treatment and re-use distribution system which enables the multiple use of water resources.
- **Implementation Measure 2.A.2.a.** In conjunction with each Implementation Plan application, prepare a Water Conservation Plan which describes the redistribution of reclaimed water resources within the Village CP for the irrigation of public or quasi-public landscape areas, remaining agricultural crop areas, or the irrigation of agricultural crops beyond the SUDP boundaries. The Water Conservation Plan will document raw water resources exchanged for reclaimed water within the San Luis Water District.

Merced County Zoning Code

The County zoning ordinance describes the allowable land uses within the unincorporated areas of the county and the regulations controlling the development of those land uses. It differs from the General Plan in that zoning establishes enforceable development standards, while the General Plan identifies future land use patterns. Zoning implements the land use policies described in the General Plan. As detailed in Chapter 2, *Project Description*, and depicted in Figure 3.11-4, the solar project site includes the following zoning designations relevant to agricultural uses:

- **General Agricultural (A-1)**—approximately 28 acres of the solar project site is zoned as A-1. The A-1 zoning designation provides intensive farming operations dependent on higher quality soils, water availability, relatively flat topography, and agricultural commercial and/or industrial uses dependent on proximity to urban areas or location in sparsely populated low traffic areas. Under this designation, parcels smaller than 40 acres down to a minimum of 20 acres may be approved where consistent with surround parcel sizes.
- **Exclusive Agricultural (A-2)**—approximately 51 acres of the solar project site is zoned as A-2. This zone is applied where agriculture is the primary use of the property. The A-2 zone allows one single-family residence per parcel of land, as well as agricultural production, a ranch office, and accessory buildings. A solar farm of the type being proposed may be allowed upon approval of a conditional use permit by the County. The A-2 designation implements the Agriculture (A), Agriculture Residential (AR), Foothill Pasture (FP), and Urban Reserve (UR) land use designations.

- **Highway Interchange Center Zone (H-I-C)**—approximately 534 acres on the solar project site is zoned as H-I-C. This zone is applied to areas identified for travel-serving commercial uses located adjacent to highway interchanges. This usage includes hotels and motels, service stations, trucks stops, as well as restaurants and banks. This zone implements the General Commercial (GC) land use designation in the General Plan.

Merced County Agricultural Preserve

Merced County established an agricultural preserve for areas within the county that are used for agricultural and open space uses per the Williamson Act. The primary objective of the preserve is to protect agricultural lands within the County for continued agricultural production, and to preserve open space uses. Establishment of the agricultural preserve is a prerequisite for landowners to enter into a land conservation contract with the County. The County has established that lands that are zoned as either General Agricultural (A-1), (A-1-40) or Exclusive Agricultural (A-2), and are consistent with the rural land use designations of the General Plan, may be a part of the agricultural preserve (Merced County 2000). As described above, all (100 percent) of the off-site mitigation site is within the agricultural preserve. None of the land within the solar project site, PG&E substation, or off-site residential redesignation area are within the agricultural preserve.¹

3.2.2 Environmental Impacts

This section describes the proposed project's potential impacts on agricultural and forestry resources. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

Methods for Analysis

Criteria from Appendix G of the CEQA Guidelines were used to determine whether the proposed project would have a significant impact related to agricultural and forestry resources. Impacts were assessed based on review of applicable data from the U.S. Department of Conservation, along with other available reports and sources.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would have a significant effect if it would result in any of the conditions listed below. In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts on forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by CAL FIRE regarding the state's inventory of forestland, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project, and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

¹ Pursuant to Agricultural Preserve Withdrawal Amendment APA07-001, approved by the Merced County Board of Supervisors on September 2, 2008, which removed the agricultural preserve designation from all lands within the Villages of Laguna San Luis Community Plan area.

Would the project:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
- Conflict with existing zoning for agricultural use or a Williamson Act contract?
- Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?
- Result in the loss of forestland or conversion of forestland to non-forest use?
- Involve other changes in the existing environment that, because of their location or nature, could result in the conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?

Impacts Not Evaluated in Detail

Result in the loss of forestland or conversion of forestland to non-forest use; conflict with existing zoning for forestland, timberland, or timberland zoned Timberland Production.

There are no forestry or timberland resources or zoned forestland or timberland areas on or near the site that would be affected by the project, either directly or indirectly. The project would result in *no impact* related to forestland or timberland, and this impact is not evaluated further.

Impacts and Mitigation Measures

Impact AG-1: 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? (*No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.*)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts related to the conversion of agricultural land. Refer to the discussion under Impact 5.11-1 on pages 5.11-11 - 13 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that Community Plan buildout would result in significant and unavoidable impacts related to the conversion of agricultural land to non-agricultural use even after implementation of Mitigation Measure 5.11-1, which requires applicants conducting earthmoving activities on Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to establish off-site conservation easements to offset the loss of on-site Farmland.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the Community Plan and an associated Zone Change covering the solar project site to create a Utility-Scale Solar Overlay. The change in land use designations for the area of the solar project site within the Community Plan would not change the impacts identified in the previous EIR, as all of that land was proposed to be converted to urban uses

as a part of the Community Plan. Furthermore, the solar project would not be required to implement Mitigation Measure 5.11-1 from the Community Plan EIR because no Prime Farmland, Farmland of Statewide Importance, or Unique Farmland exists on the solar project site. No impacts from the on-site redesignation and zone change would occur; impacts would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from slow-density residential use to high-density/medium-density residential use. This proposed change in land use designations would not change the significant impacts identified in the previous EIR because all of that land was proposed to be converted to urban uses as a part of the Community Plan. Furthermore, no Prime Farmland, Farmland of Statewide Importance, or Unique Farmland exists within the off-site residential redesignation area; thus, no impact would occur. The significant and unavoidable impacts identified in the Community Plan EIR would not be exceeded. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction, Operation, and Decommissioning

No Prime Farmland, Farmland of Statewide Importance, or Unique Farmland exists on the solar project site. Therefore, the solar project would not be required to implement Mitigation Measure 5.11-1 from the Community Plan EIR. Construction, operation, and decommissioning of the solar project would have no impact on mapped Farmland and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site outside of the Community Plan is approximately 561 acres and is designated in the County general plan as Agricultural. Development of this land was not considered in the Community Plan EIR. The proposed project includes a General Plan amendment and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay. As shown in Figure 3.2-1, this land is considered to be Farmland of Local Importance, but it is not Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. Community Plan Mitigation Measure 5.11-1 would not apply to the solar project. Therefore, the conversion of this land, during the 35-year life of the project, to a non-agricultural use would not result in a significant impact or exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Off-Site Mitigation Site

The off-site mitigation site occupies approximately 1,498 acres, of which approximately 1,309.65 acres are Grazing Land (92.82 percent) and 107.54 acres are Urban and Built-Up Land (7.18 percent). Establishment of the off-site mitigation site would not convert any agricultural land. Targeted invasive

plant management activities would be necessary to prevent invasion by pest plant species. Grazing would continue to be allowed at the off-site mitigation site. Because there is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the site, establishment of the off-site mitigation site would result in no impact; Community Plan Mitigation Measure 5.11-1 would not apply to the off-site mitigation site. Impacts would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The PG&E Los Banos Substation site occupies approximately 7 acres, of which approximately 41.37 acres are Urban and Built-Up Land (86.39 percent) and 6.5 acres Grazing Land (13.61 percent). These classifications are not considered productive farmland by the *2030 Merced County General Plan*. The substation improvements would include moving the substation fence to accommodate additional equipment and an additional 10.3 acres of PG&E-owned property, which would be graveled and fenced. Of this 10.3 acres, approximately 9.7 acres are classified as Grazing Land, and approximately 0.6 acre is classified as Urban Built-Up Land. A total of 10.3 acres, which includes 0.1 acre for the gen-tie line, would be disturbed. Because there is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the PG&E Substation improvements site, no significant impact resulting from conversion of this land to a non-agricultural use would result. Therefore, substation improvements would result in no impact; the significant and unavoidable impacts identified in the Community Plan EIR would not be exceeded. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, the combined impacts of the entire proposed project, including the off-site residential redesignation, solar project construction, PG&E substation improvements, and off-site mitigation site components, would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. Community Plan Mitigation Measure 5.11-1 would not apply. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact AG-2: Conflict with existing zoning for agricultural use or a Williamson Act contract? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts related to conflicts with agricultural zoning or Williamson Act contracts. Refer to the discussion under Impact 5.11-2 on pages 5.11-13 - 14 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that, because current agricultural zoning designations in the Community Plan area would be changed with approval of Implementation Plans to accommodate urban development, and the project would disestablish the agricultural preserve within the Community Plan area, urban land uses would not conflict with agricultural zoning designations within the Community Plan area. Therefore, the previous EIR concluded that the Community Plan project would result in less than significant impacts related to conflicts with Williamson Act contracts and agricultural zoning designations.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the Community Plan and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay. The change in land use designations for the area of the solar project site within the Community Plan would not change the impacts identified in the previous EIR, as all of that land was proposed to be redesignated and rezoned to urban uses as a part of the Community Plan. Therefore, impacts from the on-site redesignation and zone change would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from single-family residential use to high-density/medium-density residential use. This proposed change in land use designations would not change the impacts identified in the previous EIR, as all of that land was proposed to be redesignated and rezoned to urban uses as a part of the Community Plan. Impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction, Operation, and Decommissioning

No land within the solar project site is under Williamson Act contract or within the agricultural preserve. Therefore, construction, operation, and decommissioning of the solar project would have no impact on existing zoning for agricultural use or a Williamson Act contract and would not contribute any change to the less-than-significant conclusion made in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site outside of Community Plan is approximately 561 acres and currently zoned for agriculture, with 534 acres designated as a Highway Interchange Center. None of this land is under Williamson Act contract or within the agricultural preserve. Development of this land was not considered in the Community Plan EIR. The proposed project includes a General Plan amendment and an associated Zone Change covering the solar project site to create a Utility-Scale Solar Overlay. In Merced County, energy generation facilities; communication equipment; electrical distribution/transmission, substation; and public utility facilities; as well as ancillary buildings, fencing, roads, and equipment are currently allowed in agricultural zones either by right, with an administrative permit, or as a conditional use with approval of a Conditional Use Permit (CUP). The project applicant has filed an application for a CUP. (CUP Application No. 20-001). The solar project site is not subject to a Williamson Act contract, no contract parcels are adjacent to the site, and implementation of the project would not conflict with any such contract. While the proposed project will result in rezoning agriculturally zoned land, with the proposed zone change (Solar Overlay) and approval of a CUP, there would be no conflict with agricultural zoning (or HIC designation). Therefore, impacts from the solar project would be less than

significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The entirety of the PG&E Los Banos Substation site is zoned for non-agricultural uses. The site is not subject to a Williamson Act contract, and implementation of the substation improvements would not conflict with any such contract. In addition, PG&E is not subject to County zoning ordinances. Therefore, the substation improvements would not conflict with agricultural zoning or a Williamson Act contract; no impact would result. The improvements would not contribute any change to the less-than-significant conclusion made in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Off-Site Mitigation Site

The entirety of the off-site mitigation site is zoned Foothill Pasture. None of the parcels that compose the site are currently subject to Williamson Act contracts. The off-site mitigation site is comprised of parcels currently designated as agricultural preserve land. While the County currently has a moratorium on new Williamson Act contracts, this moratorium can be reversed at any time, making these parcels eligible for the Williamson Act. Livestock grazing would continue to be permitted at the site and conducted under a grazing management plan. General Plan Policy LU-2.2 states that the Foothill Pasture land use designation should be applied to “open space lands ... Recognized for their value as grazing, cropland, and open space.” Because establishment of the off-site mitigation site would protect open space and continue to allow for grazing, no conflict with the Foothill Pasture designation would occur; no impact would result. This action would not contribute any change to the less-than-significant conclusion made in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, the impacts from the entire proposed project, including the off-site residential redesignation, solar project construction, PG&E substation improvements, and off-site mitigation site components, would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact AG-3: Involve other changes in the existing environment that, because of their location or nature, could result in the conversion of Farmland to non-agricultural use? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR Notice of Preparation concluded that no other changes beyond the impacts to Prime Farmland assessed in the EIR were planned for the Community Plan project, and that therefore there would be no impacts related to other changes in the existing environment that, because of their location or nature, could result in the conversion of Farmland to non-agricultural use.

Changes in Proposed Land Uses and Development from the Community Plan and Additional Proposed Development Outside of the Community Plan

This section discusses only construction and operation of proposed project elements, as impacts related to land use designation and zoning changes are assessed in Impacts AG-1 and AG-2.

Solar Project

Construction

Refer to Impact AG-1 above for an analysis of impacts to on-site Farmland that would occur from solar project construction.

Construction of the solar project would require soil conditioning, road maintenance, dust suppression, and other uses which would require water. Construction of the solar project would require an estimated 370 acre-feet over an approximately 70-week period (equivalent to 275 acre-feet per year for 1.35 years) (EMKO Environmental, Inc. 2023). As discussed in Chapter 2, *Project Description*, water for construction would either be supplied by the SLWD through existing connections to the solar project site or be trucked to the project site from the AKT irrigation well located adjacent to SR 33 at the northwest corner of AKT's Mid-Cal property, approximately 4.4 miles north of the solar project site (Mid-Cal well). The method that is ultimately implemented will depend on which approvals are granted. As discussed in Section 3.19, *Utilities and Service Systems*, if the well option were to be implemented, current withdrawals from the well for existing agricultural users would not be reduced by construction needs of the solar project site, and irrigation would not be curtailed or reduced in any way. Under the SLWD option, the SLWD would be required to issue a Construction Water Agreement and Solar Water Management Agreement pursuant to its Rules and Regulations, ensuring that existing agricultural users are not adversely affected. Solar Water Management Agreements require the landowner to designate its agricultural water rights to the SLWD for the subject parcels for the provision of water for the solar development use during its operation. Therefore, water usage for construction would have no effect on agricultural production. In addition, no new off-site transmission lines would be required that could result in the conversion of off-site Farmland to non-agricultural use. Therefore, construction of the solar project would have no impact, consistent with the findings in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operations

Operation of the solar plant would require approximately eight employees who would travel to and from the site and move within the site. This level of travel on access roads would be small and no higher than would be expected from agricultural operations at the site; therefore, project traffic would not result in indirect effects on agricultural operations in the vicinity.

Operations of the solar project would require approximately 5 acre-feet, or 1.6 million gallons, including panel washing and irrigation demand (EMKO Environmental, Inc. 2023). As discussed in Chapter 2, *Project Description*, water for operations would either be supplied by the SLWD through existing connections to the solar project site or be obtained from the AKT irrigation well located adjacent to SR 33 at the northwest corner of AKT's Mid-Cal property, approximately 4.4 miles north of the solar project site (Mid-Cal well). The method that is ultimately implemented will depend on which approvals are granted. As discussed in Section 3.19, *Utilities and Service*

Systems, current withdrawals from the well for existing agricultural users would not be reduced by solar project operation, and irrigation would not be curtailed or reduced in any way, such that there will be no effect on agricultural production. Under the SLWD option, the SLWD would be required to issue a Construction Water Agreement and Solar Water Management Agreement pursuant to its Rules and Regulations.

The project would include constructing an internal road network with an entrance off Billy Wright Road. After decommissioning, these roads and other features may be left in place and will be incorporated into best management practices of future agricultural activities. The project would not construct any new infrastructure that would facilitate further development and convert agricultural land to non-agricultural uses. Given the relatively small amount of land cover associated with future roadways, this impact would be less than significant.

The solar project would connect to existing infrastructure. The daily traffic from the small operating staff would not affect agricultural activities or require new infrastructure that would facilitate the conversion of agricultural land. Therefore, operation of the solar project would have no impact, consistent with the findings in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning and site reclamation of the solar project site would begin immediately after the 35-year lifespan of the solar project, expected in 2060. Decommissioning would reclaim soils and areas affected by the project, bringing them back to, at a minimum, support uses for the land consistent with pre-construction activities, which consists of grazing and dry farming.

Decommissioning would not lead to any changes that would result in the conversion of agricultural land to non-agricultural use. Therefore, decommissioning would have no impact, consistent with the findings in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Off-Site Mitigation Site

As described in Impact AG-1, establishing the off-site mitigation site would not convert any agricultural land, and grazing would continue to be a permitted use. The area surrounding the proposed mitigation site is Grazing Land. Because grazing would continue to be permitted on the off-site mitigation site and in the surrounding area, establishing the off-site mitigation site would not encourage a nearby site to convert to non-agricultural use; therefore, any changes resulting from implementation of the off-site mitigation site would have no impact, consistent with the findings in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

As described in Impact AG-1, substation improvements would not convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. With the exception of the gen-tie line, which would disturb less than 0.1 acre of land classified as Grazing Land, no new off-site transmission lines would be required that could result in the conversion of

off-site farmland of any kind to non-agricultural use. Therefore, the substation improvements would have no impact, consistent with the findings in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, the whole of the proposed project, including the solar project, off-site residential redesignation, off-site mitigation site, and PG&E substation improvements, would have no impact, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

3.2.3 References Cited

Printed References

- California Department of Conservation. 2020. *Division of Land Resource Protection, Farmland Mapping and Monitoring Program, 2014–2016 Farmland Conversion Report*. Available: https://www.conservation.ca.gov/dlrp/fmmp/Pages/2014-2016_Farmland_Conversion_Report.aspx. Accessed: November 28, 2022.
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- Natural Resources Conservation Service. 2007. *U.S. Land Use and Soil Classification*. Available: <https://www.ars.usda.gov/ARSUserFiles/np215/Food%20security%20talk%20inputs%20Lunch%203-15-11.pdf>. Accessed: November 29, 2022.

3.3 Air Quality

This section identifies and evaluates the project's potential impacts on air quality, including the potential short- and long-term air quality impacts associated with construction and operation of the project. It also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site General Plan amendment are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Relevant technical documentation used in this analysis includes:

- *Air Quality Technical Report, Las Camas Solar Project, (AQR) (ICF 2024) (Appendix 3.3-1)*

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. These include recommended buffer distances for residential land uses near the Billy Wright landfill; concerns regarding health risks due to the increased intensity of residential land uses near the landfill; and SJVAPCD methodologies for analyzing air quality issues, in addition to implementation of SJVAPCD permits, rules, and regulations.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.3.1 Existing Conditions

Environmental Setting

Regional Setting

The project site is in Merced County, which is in the San Joaquin Valley Air Basin (SJVAB). The SJVAB includes all of Fresno, Kings, Madera, Merced, Stanislaus, and Tulare counties and the valley portion of Kern County. Ambient concentrations of air pollutants are determined by the levels of emissions released by pollutant sources and the ability of the atmosphere to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and the presence of sunlight. Therefore, existing air-quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air-pollutant sources, as discussed separately below (SJVAPCD 2015b).

Topography and Meteorology

The SJVAB comprises the southern half of California's Central Valley and is approximately 250 miles long and averages 35 miles wide. The SJVAB is bordered by the Sierra Nevada in the east, the Coast Ranges in the west, and the Tehachapi Mountains in the south. There is a slight, downward elevation gradient from Bakersfield in the southeastern end (elevation 408 feet) to sea level at the northwestern end, where the valley opens to the San Francisco Bay at the Carquinez Straits. At its northern end is the Sacramento Valley, which comprises the northern half of California's Central Valley. The bowl-shaped topography inhibits movement of pollutants out of the SJVAB.

The SJVAB is in a Mediterranean Climate Zone and influenced by a subtropical, high-pressure cell most of the year. Rainfall is sparse, occurring mainly in winter. Summers are hot and dry. Summertime maximum temperatures often exceed 100 degrees Fahrenheit (°F).

The subtropical, high-pressure cell is strongest during spring, summer, and fall and produces subsiding air, which can result in temperature inversions in the SJVAB. A temperature inversion can act like a lid, inhibiting vertical mixing of the air mass at the surface. Any emissions of pollutants can be trapped below the inversion. Most of the surrounding mountains are above the normal height of summer inversions (1,500–3,000 feet).

Wintertime high-pressure events can often last many weeks, with surface temperatures often lowering to 30–40°F. During these events, fog can be present, and inversions are extremely strong. These wintertime inversions can inhibit vertical mixing of pollutants to a few hundred feet.

Solar radiation and temperature are particularly important in the chemistry of ozone formation. The SJVAB averages more than 260 sunny days per year. Photochemical air pollution (primarily ozone) is produced by the atmospheric reaction of organic substances (e.g., volatile organic compounds [VOCs]) and oxides of nitrogen under the influence of sunlight.

Criteria Air Pollutants

The following provides a summary discussion of the primary and secondary criteria air pollutants of key concern. In general, primary pollutants are directly emitted into the atmosphere, and secondary pollutants are formed by chemical reactions in the atmosphere.

Ozone

Ozone, the main ingredient in urban smog, is not emitted directly into the air, but is created by chemical reactions between hydrocarbons and NO_x, both byproducts of the internal-combustion engine, in the presence of sunlight. Reactive organic gases (ROGs) are defined by the California Air Resources Board (CARB) and include all hydrocarbons except those exempted by CARB that contribute to smog formation, whereas VOCs are defined by the U.S. Environmental Protection Agency (EPA) and include all hydrocarbons except those exempted by EPA. Generally speaking, ROGs and VOCs are similar, but not identical; although the terms are used interchangeably, ROG is used for purposes of this analysis. There are no separate NAAQS or CAAQS for ROG. Carcinogenic forms of ROGs are toxic air contaminants (TACs) (e.g., benzene).

ROGs consists of compounds made up primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicles is the major source of hydrocarbons. Other sources of ROGs are emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products, such as aerosols.

The two major forms of NO_x are nitric oxide (NO) and NO₂. NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperatures and/or high pressure. NO₂ is an irritating, reddish-brown gas formed by the combination of NO and oxygen. In addition to serving as an integral participant in ozone formation, NO_x also directly acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

Ozone poses a higher risk to those who already suffer from respiratory diseases (e.g., asthma), children, older adults, and people who are active outdoors. Exposure to ozone at certain concentrations can make breathing more difficult, cause shortness of breath and coughing, inflame and damage the airways, aggregate lung diseases, increase the frequency of asthma attacks, and cause chronic obstructive pulmonary disease. Studies show associations between short-term ozone exposure and nonaccidental mortality, including deaths from respiratory issues. Studies also suggest that long-term exposure to ozone may increase the risk of respiratory-related deaths (EPA 2022b). The concentration of ozone at which health effects are observed depends on an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least-responsive individual after a 2-hour exposure to 400 parts per billion of ozone and a 50-percent decrement in forced airway volume in the most responsive individual. Although the results vary, evidence suggest that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum ozone concentration reaches 80 parts per billion (EPA 2022c).

In addition to human health effects, ozone has been tied to crop damage, typically in the form of stunted growth, leaf discoloration, cell damage, and premature death. Ozone can also act as corrosives and oxidants, resulting in property damage, such as the degradation of rubber products and other materials.

Carbon Monoxide

CO is a colorless, odorless, and toxic gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is considered a local pollutant because it tends to accumulate in the air locally. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation. Exposure to CO at high concentrations can also cause fatigue, headaches, confusion, dizziness, and chest pain. There are no ecological or environmental effects for ambient CO (CARB 2019).

Particulate Matter

Particulate matter (PM) consists of finely divided solids or liquids, such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized: respirable coarse particles with an aerodynamic diameter of 10 micrometers or less, or PM₁₀, and respirable fine particles with an aerodynamic diameter of 2.5 micrometers or less, or PM_{2.5}. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. However, wind on arid landscapes also contributes substantially to local particulate loading. PM is considered both a local and a regional pollutant.

Particulate pollution can be transported over long distances and may adversely affect humans, especially people who are naturally sensitive or susceptible to breathing problems (i.e., asthmatics). Numerous studies have linked PM exposure to premature death in people with preexisting heart or lung disease. Other symptoms of exposure may include nonfatal heart attacks, irregular heartbeats,

aggravated asthma, decreased lung function, and increased respiratory symptoms. Depending on composition, PM₁₀ and PM_{2.5} can also affect water quality and acidity, deplete soil nutrients, damage sensitive forests and crops, affect ecosystem diversity, and contribute to acid rain (EPA 2022a).

Sulfur Dioxide

SO₂ is a colorless, irritating gas with a rotten egg smell, primarily formed from the combustion of fossil fuels containing sulfur. SO₂ is considered a local pollutant because it tends to accumulate in the air locally. High concentrations of SO₂ can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposure of asthmatic individuals to elevated SO₂ levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms like wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO₂, in conjunction with high levels of PM, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in lung defenses. SO₂ also is a major precursor to PM_{2.5}, which is a significant health concern and a main contributor to poor visibility (see also the discussion of health effects of PM, above).

Lead

Lead is a naturally existing metal that can be a constituent of air, water, and the biosphere. Lead is considered a local pollutant because it tends to accumulate in the air locally. This highly toxic metal, used for many years in everyday products, has been found to lead to a range of health effects, from behavioral problems and learning disabilities to seizures and death (EPA 2023d). Effects on children's nervous systems are one of the primary health risk concerns from lead. When lead is present in high concentrations, children can even suffer irreversible brain damage and death. Children 6 years old and under are most at risk because their bodies are growing quickly.

Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels; however, the use of leaded fuel has been mostly phased out. Since this has occurred, the ambient lead levels have dropped dramatically.

Other Criteria Pollutants

CARB has also established CAAQS for hydrogen sulfide (H₂S), sulfates, vinyl chloride, and visibility-reducing particles. These pollutants are not addressed by federal standards. Below is a summary of these pollutants and a description of their physical properties, health and other effects, sources, and the extent of the problems.

Hydrogen sulfide emissions often are associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal-feeding operations. H₂S in the atmosphere would likely oxidize into SO₂, which can lead to acid rain. At low concentrations, H₂S may cause dizziness, headaches, and irritation to the eyes, mucous membranes, and respiratory system. In high concentrations, H₂S is extremely hazardous (i.e., 800 parts per million can cause death), especially in enclosed spaces (CARB 2023a). The Occupational Safety and Health Administration (OSHA) has the primary responsibility for regulating workplace exposure to H₂S.

Sulfates are another particulate product that result from the combustion of sulfur-containing fossil fuels; however, the majority of ambient sulfates are formed in the atmosphere. When SO₂ comes in contact with oxygen, it precipitates out into sulfates. Data collected in the Mojave Desert Air Basin

have demonstrated that levels of sulfates are significantly lower than the health standards. The health effects associated with SO₂ and sulfates, more commonly known as SO_x, include respiratory illnesses, decreased pulmonary-disease resistance, and aggravation of cardiovascular diseases (CARB 2023b). When acidic pollutants and particulates are also present, SO₂ tends to have an even more toxic effect. Increased PM derived from SO₂ emissions also contributes to impaired visibility. In addition to particulates, sulfur trioxide and sulfate ion are precursors to acid rain; SO_x and NO_x are the leading precursors to acid rain, which can lead to corrosion of human-made structures and cause acidification of waterbodies.

Visibility-reducing particles consist of PM generated from a variety of natural and human-made sources and vary greatly in shape, size, and chemical composition. Some haze-causing particles (e.g., windblown dust and soot) are directly emitted into the air, whereas others are formed in the air from the chemical transformation of gaseous pollutants (e.g., sulfates, nitrates, organic carbon particles), which are the major constituents of fine PM (CARB 2023c). These fine particles, caused largely by the combustion of fuel, can travel hundreds of miles and cause visibility impairment. California has been labeled unclassified for visibility—CARB has not established a method for measuring visibility with the precision and accuracy needed to designate areas attainment or nonattainment. The proposed project is not expected to have any adverse impacts on visibility in any Class I area.

Vinyl chloride is a colorless, sweet-smelling gas at ambient temperature. Landfills, publicly owned treatment works, and polyvinyl chloride production are the major identified sources of vinyl chloride emissions in California. Polyvinyl chloride can be fabricated into several products, such as pipes, pipe fittings, and plastics. In humans, epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of liver angiosarcoma, a rare cancer, and have suggested a relationship between exposure and lung and brain cancers (CARB 2023d).

Attainment Designations

SJVAB is designated as being in nonattainment with respect to NAAQS and CAAQS for both ozone and PM_{2.5}, as well as CAAQS for PM₁₀ (SJVAPCD 2022).

Toxic Air Contaminants

Diesel particulate matter (DPM) and naturally occurring asbestos are the TACs of primary concern in rural areas of Merced County, as discussed in greater detail below.

Diesel Particulate Matter

Diesel trucks travelling on I-5 are the predominant source of TAC emissions near the project site. As described above, DPM emitted in the exhaust of diesel-powered vehicles is designated as a TAC.

Naturally Occurring Asbestos

Asbestos is the common name for a group of naturally occurring fibrous silicate minerals that can separate into thin, but strong and durable, fibers. Naturally occurring asbestos, which was identified as a TAC by CARB in 1986, is found in many parts of California and commonly associated with serpentine soils and rocks. According to reports by the California Department of Conservation and Division of Mines and Geology (2000), naturally occurring asbestos is not likely to occur within the project vicinity.

Valley Fever

Coccidioidomycosis, more commonly known as *Valley Fever*, is primarily a disease of the lungs caused by the spores of the *Coccidioides immitis* fungus. The spores are found in soils, become airborne when the soil is disturbed, and are subsequently inhaled into the lungs. After the fungal spores have settled in the lungs, they change into a multicellular structure called a *spherule*. Fungal growth in the lungs occurs as the spherule grows and bursts, releasing endospores, which then develop into more spherules.

Valley Fever symptoms occur within 2 to 3 weeks of exposure. Approximately 60 percent of Valley Fever cases are mild and display flu-like symptoms or no symptoms at all. Of those who are exposed and seek medical treatment, the most common symptoms include fatigue, cough, loss of appetite, rash, headache, and joint aches. In some cases, painful red bumps may develop. These symptoms are not unique to Valley Fever and also may be caused by other illnesses. Identifying and confirming this disease requires specific laboratory tests, such as (1) microscopic identification of the fungal spherules in infected tissue, sputum, or body fluid sample; (2) growing a culture of *Coccidioides immitis* from a tissue specimen, sputum, or body fluid; (3) detection of antibodies (i.e., serological tests specifically for Valley Fever) against the fungus in blood serum or other body fluids; and (4) administering the Valley Fever Skin Test (called *coccidioidin* or *spherulin*), which indicates prior exposure to the fungus (Valley Fever Center for Excellence 2019).

Valley Fever is not contagious. Most of those who are infected recover without treatment within 6 months and have a lifelong immunity to the fungal spores. In severe cases, such as in patients with rapid and extensive primary illnesses, those who are at risk for dissemination of disease, and those who have disseminated disease, antifungal drug therapy is used. Only 1 to 2 percent of those exposed who seek medical attention develop a disease that disseminates to other parts of the body other than the lungs. Approximately 60 percent of Valley Fever cases are mild, and no medical treatment is sought. Table 3.3-1 presents the various infection classifications and normal diagnostic spread as noted in recent research conducted by the Valley Fever Center for Excellence (2019).

Table 3.3-1. Range of Valley Fever Cases

Infection Classification	Percent of Total Diagnosed Cases
Unapparent Infections	60 percent
Mild to Moderate Infections	30 percent
Infections Resulting in Complications	5–10 percent
Fatal Infections	< 1 percent

Source: Valley Fever Center for Excellence 2019.

Coccidioides immitis fungal spores are often found in the soil around rodent burrows, Native American ruins, and burial grounds. The spores become airborne when the soil is disturbed by wind, construction, farming, and other soil-disturbing activities. This type of fungus is endemic to the southwestern United States, including the San Joaquin Valley. Rates of Valley Fever cases in Merced County range from 40–99 cases per 100,000 people annually (California Department of Public Health 2021). The ecological factors that appear to be most conducive to the survival and replication of the fungal spores are high summer temperatures, mild winters, sparse rainfall, and alkaline, sandy soils. No vaccine to protect humans from Valley Fever currently exists.

Solar Project Site

The approximately 1,741-acre solar project site is bordered by State Route (SR) 33 to the north, Interstate 5 to the east, and privately owned farmland and the Billy Wright Landfill to the south and west. Billy Wright Road borders the southeasternmost portion of the solar project site. The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming. Current uses and activities on the solar project site do not generate air pollutant emissions.

PG&E Substation

The PG&E Los Banos Substation is approximately 0.2 mile west of the solar project site; the substation's equipment is fenced within a footprint of approximately 47 acres. The PG&E Los Banos Substation generates limited mobile emissions from maintenance and operation personnel occasionally traveling to the site.

Off-Site Mitigation Site

The off-site mitigation site is an area of approximately 1,498 acres, located approximately 5 miles south of the solar project site and immediately south of the Los Banos Reservoir. The off-site mitigation site is currently composed of grassland habitat used for grazing; it contains no existing uses or activities that generate air emissions.

Off-Site Residential Redesignation Area

As described in Chapter 2, *Project Description*, the proposed off-site residential redesignation area falls within the Villages of Laguna San Luis Community Plan area. The Community Plan designates the off-site residential redesignation area for varying residential densities, among other uses. As described in Chapter 3 of the Community Plan EIR on page 3-1, and incorporated by reference, the off-site residential redesignation area is used primarily for active and fallowed agricultural production (e.g., alfalfa, hay, oats, vineyards, orchards) and cattle and sheep grazing. This discussion accurately describes the current existing setting at the residential redesignation area.

Nearby Land Uses and Sensitive Receptors

Sensitive land uses are defined as locations where pollutant-sensitive members of the population may reside or where the presence of air pollutant emissions could adversely affect the people present. Sensitive members of the population include those who may be negatively affected by poor air quality more than others, such as children, the elderly, or the infirm. Per SJVAPCD, typical sensitive land uses include residences, hospitals, care facilities, schools, daycares, and parks (SJVAPCD 2022). Places of employment (e.g., commercial/industrial uses) are not considered sensitive land uses because health-sensitive individuals (e.g., children and seniors) are not present.

As described in Section 1.3 of the AQR, the project site is in an area of relatively low population density. Land uses surrounding the project site consist of mainly open-space areas, light agricultural land, low-density single-family housing, and undeveloped grazing lands. Figure 3.3-1 shows that a small neighborhood of approximately 50 single-family residences is adjacent to the northwestern portion of the solar project site. A recreational vehicle park and resort, the Los Banos West/I-5 KOA, is approximately 1,000 feet north of the northwestern portion of the solar project site. One single-family residence is also across SR 152 from the solar project site's northern boundary. In addition,

multiple rural residences are south of the solar project site, the closest of which is approximately 950 feet from the solar project site boundary. The adjacent residences existed at the time of the Community Plan EIR (Community Plan EIR, pp. 3-1 through 3-3).

Regulatory Setting

Air quality in the project area is regulated through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly and individually to improve air quality through legislation, planning, policymaking, education, and a variety of other programs. The agencies responsible for improving the air quality within the air basin are discussed below.

Federal

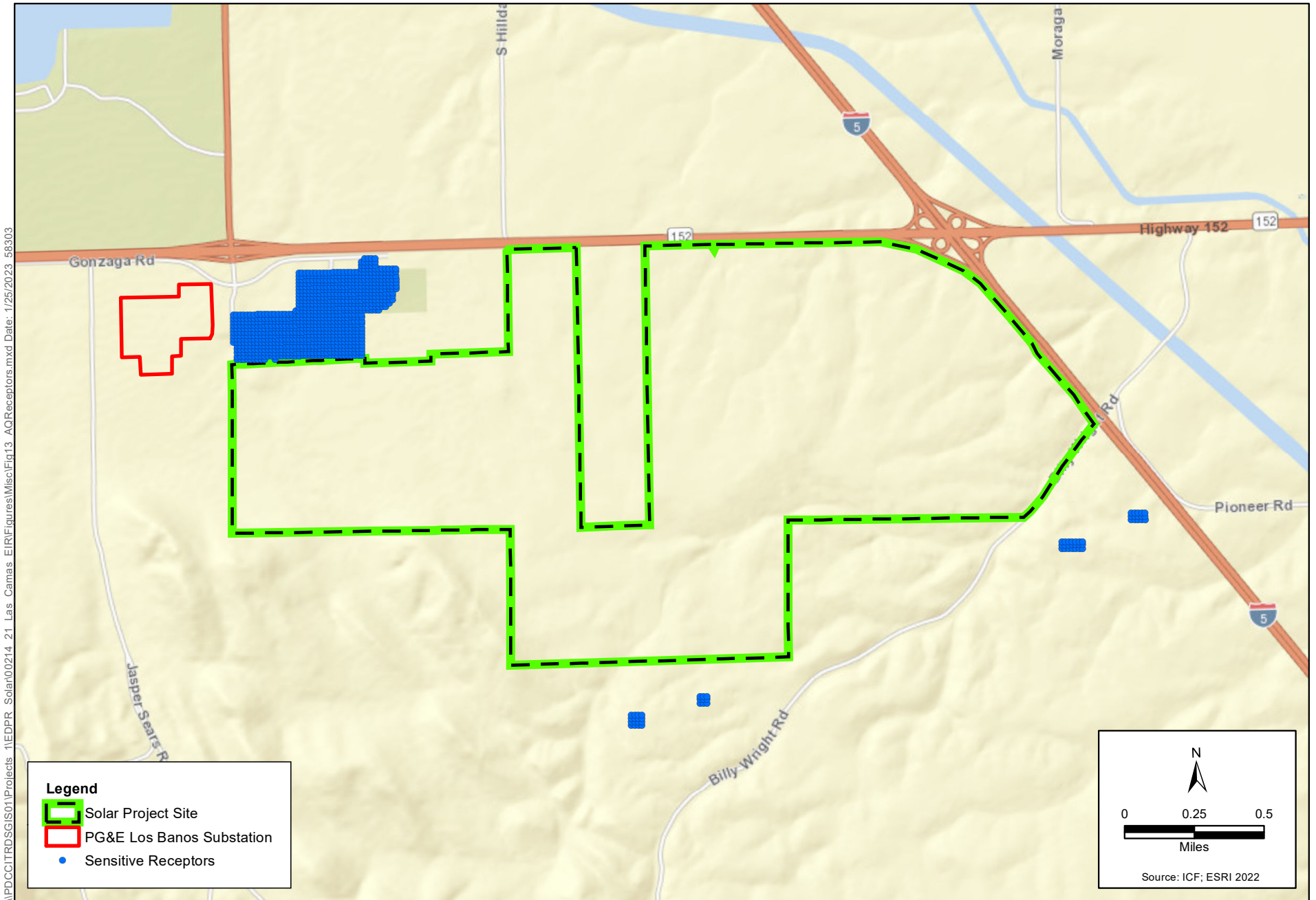
Criteria Air Pollutants

National Ambient Air Quality Standards

EPA has been charged with implementing national air quality programs. EPA's air quality mandates draw primarily from the federal Clean Air Act (CAA), which was enacted in 1963. The most recent major amendments were made by Congress in 1990. The CAA required EPA to establish national ambient air quality standards (NAAQS) for six common air pollutants found all over the United States, referred to as *criteria air pollutants*. EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM₁₀), fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less (PM_{2.5}), and lead. The NAAQS are shown in Table 3.3-2. The primary standards protect public health, and the secondary standards protect public welfare. The CAA also required each state to prepare a State Implementation Plan (SIP) for attaining and maintaining the NAAQS. The federal CAA Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures for reducing air pollution. California's SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments and whether implementation would achieve air quality goals. If EPA determines a SIP to be inadequate, EPA may prepare a federal implementation plan that imposes additional control measures. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.

Corporate Average Fuel Economy Standards for Light-Duty Passenger Vehicles

The National Highway Traffic Safety Administration (NHTSA) Corporate Average Fuel Economy (CAFE) standards require substantial improvements in fuel economy and reductions in emissions of criteria air pollutants and precursors, as well as greenhouse gases (GHGs), from all light-duty vehicles sold in the United States. On August 2, 2018, NHTSA and EPA proposed an amendment to the fuel efficiency standards for passenger cars and light trucks and established new standards for model years 2021 through 2026 that would maintain the then-current 2020 standards through 2026—this was known as the *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule*. On September 19, 2019, NHTSA



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Figure 3.3-1
Air Quality Sensitive Receptors within 1,000 feet of the Project Site

Table 3.3-2. National and California Ambient Air Quality Standards

Criteria Pollutant	Average Time	California Standards	National Standards ¹	
			Primary	Secondary
Ozone	1-hour	0.09 ppm	None ²	None ²
	8-hour	0.070 ppm	0.070 ppm	0.070 ppm
Particulate Matter (PM ₁₀)	24-hour	50 µg/m ³	150 µg/m ³	150 µg/m ³
	Annual mean	20 µg/m ³	None	None
Fine Particulate Matter (PM _{2.5})	24-hour	None	35 µg/m ³	35 µg/m ³
	Annual mean	12 µg/m ³	12.0 µg/m ³	15 µg/m ³
Carbon Monoxide (CO)	8-hour	9.0 ppm	9 ppm	None
	1-hour	20 ppm	35 ppm	None
Nitrogen Dioxide (NO ₂)	Annual mean	0.030 ppm	0.053 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppm	None
Sulfur Dioxide ³ (SO ₂)	Annual mean	None	0.030 ppm	None
	24-hour	0.04 ppm	0.014 ppm	None
	3-hour	None	None	0.5 ppm
	1-hour	0.25 ppm	0.075 ppm	None
Lead	30-day average	1.5 µg/m ³	None	None
	Calendar quarter	None	1.5 µg/m ³	1.5 µg/m ³
	3-month average	None	0.15 µg/m ³	0.15 µg/m ³
Sulfates	24-hour	25 µg/m ³	None	None
Visibility-Reducing Particles	8-hour	- ⁴	None	None
Hydrogen Sulfide (H ₂ S)	1-hour	0.03 ppm	None	None
Vinyl Chloride	24-hour	0.01 ppm	None	None

Source: CARB 2016.

¹ National standards are divided into primary and secondary standards. *Primary standards* are intended to protect public health, whereas *secondary standards* are intended to protect public welfare and the environment.

² The federal 1-hour standard of 12 parts per hundred million was in effect from 1979 through June 15, 2005. The revoked standard is referenced because it was employed for such a long period and is a benchmark for SIPs.

³ The annual and 24-hour NAAQS for SO₂ only apply for 1 year after designation of the new 1-hour standard to those areas that were previously in nonattainment for 24-hour and annual NAAQS.

⁴ CAAQS for visibility-reducing particles is defined by an extinction coefficient of 0.23 per kilometer—visibility of 10 miles or more due to particles when relative humidity is less than 70 percent (CARB 2021c).

CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; ppm = parts per million; µg/m³ = micrograms per cubic meter.

and EPA issued a final action on the One National Program Rule, which is considered Part One of the SAFE Vehicles Rule and a precursor to the proposed fuel efficiency standards. The One National Program Rule enabled NHTSA and EPA to provide nationwide uniform fuel economy and air pollutant standards by 1) clarifying that federal law preempts state and local tailpipe standards; 2) affirming NHTSA's statutory authority to set nationally applicable fuel economy standards; and 3) withdrawing California's CAA preemption waiver to set state-specific standards.

NHTSA and EPA published their decision to withdraw California's waiver and finalize the regulatory text related to the preemption on September 27, 2019 (84 *Federal Register* 51310). California, 22 other states, the District of Columbia, and two cities filed suit against Part One of the SAFE Vehicles Rule on September 20, 2019 (*California et al. v. United States Department of Transportation et al.*,

1:19-cv-02826, U.S. District Court for the District of Columbia). On October 28, 2019, the Union of Concerned Scientists, Environmental Defense Fund, and other groups filed a protective petition for review after the federal government sought to transfer the suit to the District of Columbia (*Union of Concerned Scientists v. National Highway Traffic Safety Administration*). The lawsuit filed by California and others has been stayed, pending resolution of the petition.

NHTSA and EPA published final rules on April 30, 2020, to amend and establish national air pollutant and fuel economy standards (Part Two of the SAFE Vehicles Rule) (85 *Federal Register* 24174). The revised rule changes the national fuel economy standards for light-duty vehicles from 46.7 miles per gallon (mpg) to 40.4 mpg in future years. California, 22 other states, and the District of Columbia filed a petition for review of the final rule on May 27, 2020 (*California et al. v. United States Department of Transportation et al.*, 1:19-cv-02826, U.S. District Court for the District of Columbia).

On January 20, 2021, President Biden issued an Executive Order (EO) directing NHTSA and EPA to review the SAFE Vehicles Rule, Part One, and propose a new rule for suspending, revising, or rescinding the Rule by April 2021. The EO also requires NHTSA and EPA to propose a new rule for suspending, revising, or rescinding Part Two by July 2021. On April 22, 2021, NHTSA announced that it proposes to repeal the SAFE Vehicles Rule, Part One, allowing California the right to set its own standards (DOT 2021).

On December 12, 2021, NHTSA repealed the SAFE Vehicles Rule, Part One. On December 19, 2021, NHTSA finalized its vehicle efficiency standards rule to reach a projected industry-wide target of 40 mpg by 2026, an approximately 25 percent increase over the prior SAFE Vehicles Rule. Lastly, on March 9, 2022, EPA reinstated California's authority under the CAA to implement its own GHG emissions standards and sales mandate regarding zero-emission vehicles. This action concluded EPA's reconsideration of 2019's SAFE Vehicles Rule, Part One, by finding that actions under the previous administration, as part of SAFE-1, were decided in error; the actions are now rescinded (EPA 2022a).

Emission Standards for On-Road Heavy-Duty Vehicles

EPA has established a series of increasingly strict emission standards for new heavy-duty bus and truck engines (EPA 2023a). Emissions from heavy-duty trucks are managed by regulations and emission limits implemented at the federal, state, and local levels. In December 2000, EPA signed the Heavy-Duty Highway Rule, which reduces emissions from on-road, heavy-duty diesel trucks by establishing a series of increasingly strict emission standards for new engines. Manufacturers were required to produce new diesel vehicles that meet PM and nitrogen oxide (NO_x) emission standards beginning with model year 2007, with the phase-in period being between 2007 and 2010. The phase-in was based on a percentage-of-sales basis: 50 percent from 2007 to 2009 and 100 percent in 2010. Requirements apply to engines installed in all vehicles with a gross vehicle weight rating (GVWR) above 14,000 pounds and to some engines installed in vehicles with a GVWR between 8,500 and 14,000 pounds.

Emission Standards for Non-Road Diesel Engines

To reduce emissions from non-road diesel equipment, EPA established a series of increasingly strict emission standards for new, non-road diesel engines, also referred to as *off-road diesel engines* (EPA 2023b). Tier 1 standards were phased in on newly manufactured equipment from model years 1996 through 2000, depending on the engine horsepower category. Tier 2 standards were phased in on newly manufactured equipment from model years 2001 through 2006. Tier 3 standards were phased in on newly manufactured equipment from model years 2006 through 2008. Tier 4 standards, which require advanced emission-control technology, were phased in from model years 2008 through 2015.

Hazardous Air Pollutants and Toxic Air Contaminants

TACs or, in federal parlance, Hazardous Air Pollutants (HAPs), are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally assessed locally, rather than regionally. TACs can cause long-term health effects, such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects, such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

For evaluation purposes, TACs are separated into carcinogens and noncarcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established (Table 3.3-2). Cancer risk from TACs is expressed as excess cancer cases per million exposed individuals, typically over a lifetime of exposure.

EPA and CARB regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum-available control technology or best-available control technology for air toxics to limit emissions (EPA 2023c; CARB 2023e).

State

Criteria Air Pollutants

CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA required CARB to establish California Ambient Air Quality Standards (CAAQS). The CCAA established CAAQS for the same criteria air pollutants for which EPA established NAAQS, and also for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulate matter. CAAQS are also summarized in Table 3.3-2. In most cases, CAAQS are more stringent than NAAQS. Differences in NAAQS and CAAQS are generally explained by the health-effects studies considered during the standard-setting process and the interpretation of the studies. In addition, CAAQS incorporate a margin of safety to protect sensitive individuals.

In California, EPA has delegated authority to prepare SIPs to CARB, which, in turn, has delegated that authority to individual air districts. CARB traditionally has established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving SIPs. The CCAA requires that all local air districts in the state endeavor to attain and maintain the CAAQS by the earliest date practical. The CCAA specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources. The CCAA substantially adds to the authority and responsibilities of air districts. The CCAA designates air districts as lead air-quality planning agencies, requires air districts to prepare air-quality plans, and grants air districts authority to implement transportation-control

measures. The CCAA also emphasizes the control of “indirect and area-wide sources” of air pollutant emissions. The CCAA gives local air-pollution control districts explicit authority to regulate indirect sources of air pollution and establish traffic-control measures.

Low-Emission Vehicle Program Regulation

CARB has established various regulations to address exhaust emissions standards for both on-road and off-road vehicles, as mentioned in the above discussion of CAFE standards for light-duty passenger vehicles.

Vehicle Efficiency and Zero-Emissions Standards

Assembly Bill (AB) 1493 (Pavley I) required CARB to develop and implement regulations to reduce automobile and light-truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks, beginning with the 2009 model year. Additional strengthening of the Pavley standards (referred to previously as *Pavley II* but now referred to as the *Advanced Clean Cars* measure) was adopted in 2012 for vehicle model years 2017–2025. Together, the two standards are expected to increase average fuel economy to roughly 54.5 miles per gallon in 2025.

In August 2022, CARB board members voted to approve the Advanced Clean Cars II proposal, which aimed to dramatically reduce emissions from passenger cars (model years 2026 through 2035). This would require an increasing proportion of new vehicles to be zero-emission vehicles, with the goal being to have 100 percent of new vehicles sold by 2035 to be zero-emission vehicles (CARB 2022b).

CARB also adopted the Advanced Clean Truck Regulation to accelerate large-scale transition to zero-emission medium- and heavy-duty vehicles (CARB 2023f). The regulation would require zero-emission medium- and heavy-duty vehicles to make up an increasing percentage of total annual vehicle sales in California sales between 2024 and 2035. By 2035, zero-emission truck/chassis sales would need to amount to 55 percent of Class 2b – 3 truck sales, 75 percent of Class 4 – 8 straight truck sales, and 40 percent of truck tractor sales. By 2045, every new medium- and heavy-duty truck sold in California will be zero-emission vehicle. Large employers, including retailers, manufacturers, brokers, and others, are required to report information about shipments and shuttle services to ensure that fleets purchase available zero-emission trucks.

Low-Carbon Fuel Standard

With EO S-01-07, Governor Schwarzenegger set forth the low-carbon fuel standard for California in 2007. Under this EO, the carbon intensity of California’s transportation fuel is to be reduced by at least 20 percent by 2030.

Sierra Club v. County of Fresno

In December 2018, the California Supreme Court issued its decision in *Sierra Club v. County of Fresno* (226 Cal.App.4th 704). The case reviewed the long-term regional air-quality analysis contained in the environmental impact report (EIR) for the proposed Friant Ranch development. The project is located in unincorporated Fresno County within the San Joaquin Valley Air Basin (SJVAB), an air basin designated as nonattainment with respect to NAAQS and CAAQS for both ozone and PM_{2.5}, and CAAQS for PM₁₀ (SJVAPCD 2022). The Court ruled that the air-quality analysis failed to adequately disclose the nature and magnitude of long-term significant air-quality impacts from emissions of

criteria pollutants and precursors “in sufficient detail to enable those who did not participate in its preparation to understand and consider meaningfully the issues the proposed project raises.” The Court noted that the air-quality analysis, which showed that the project substantially exceeded the threshold of significance, did not provide a discussion of the foreseeable adverse effects of the project-generated emissions on Fresno County’s likelihood of exceeding NAAQS and CAAQS for criteria air pollutants, nor did it explain a connection between the project’s emissions and deleterious health impacts. Moreover, as noted by the Court, the EIR did not explain why it was not “scientifically possible” to determine such a connection. The Court concluded that “because the EIR as written makes it impossible for the public to translate the bare numbers provided into adverse health impacts or to understand why such translation is not possible at this time,” the EIR’s discussion of air-quality impacts was inadequate.

Writing as amicus curiae in *Sierra Club*, the SJVAPCD explained that “[t]he health impact of a particular criteria pollutant is analyzed on a regional and not a facility level based on how close the area is to complying with (attaining) the (National Ambient Air Quality Standards [NAAQS]). Accordingly, while the type of individual facility/health impact analysis that the Court of Appeal has required is a customary practice for TACs, it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task” (SJVAPCD 2015d).

Instead, the SJVAPCD explained that it assesses a project’s potential to exceed NAAQS by evaluating the project’s compliance with district thresholds of significance, which are measured in mass emissions (SJVAPCD 2015d). As explained by SJVAPCD, its thresholds are based on factual, scientific data and have been set at a level that ensures that NAAQS will not be exceeded, taking into consideration all cumulative emission sources (SJVAPCD 2015d). The SJVAPCD explained that attempting to connect criteria pollutant emissions to localized health impacts will “not yield reliable information because currently available modeling tools are not well suited for this task” (SJVAPCD 2015d). Available models are only equipped to model the impact of all emissions sources on an air basin-wide or regional basis, not on a project-level basis, and “[r]unning the photochemical grid model used for predicting ozone attainment with emissions solely from one project would thus not be likely to yield valid information given the relative scale involved” (SJVAPCD 2015d).

This inability to “accurately ascertain local increases in concentration” of mass emissions and then to further link emissions with health effects is particularly true for O_3 and its precursors NO_x and ROG and VOC; O_3 is not directly emitted into the air but is instead formed as ozone precursors undergo complex chemical reactions through sunlight exposure (SJVAPCD 2015d). Given the complex nature of this process, and the fact that O_3 can be transported by wind over long distances, “a specific tonnage amount of NO_x or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area” (SJVAPCD 2015d). For this reason, the photochemical analysis for O_3 is done on a regional scale and it is inappropriate to analyze O_3 impacts at a local or project-level basis because a localized analysis would at most be speculative, and at worst be misleading. Speculative analysis is not required by CEQA (CEQA Guidelines Section 15145; *Laurel Heights Improvement Association v. Regents of the University of California* 1988).

The SJVAPCD also explained that the disconnect between the tonnage of precursor pollutants and the concentration of O_3 or particulate matter formed in a particular area is especially important to understand in considering potential health effects because it is the concentration, not the tonnage, that causes health effects (SJVAPCD 2015d). The SJVAPCD explained that even if a model were developed that could accurately assess local increases in concentrations of pollutants like O_3 and particulates, it would still be “impossible, using today’s models, to correlate that increase in

concentration to a specific health impact” (SJVAPCD 2015d). The SJVAPCD stated that even a project with criteria pollutant emissions above its CEQA thresholds does not necessarily cause localized human health impacts as, even with relatively high levels of emissions, the SJVAPCD cannot determine “whether and to what extent emissions from an individual project directly impact human health in a particular area” (SJVAPCD 2015d). The SJVAPCD explained that this is particularly true for development projects like the project, where most of the criteria pollutants derive from mobile and area sources and not stationary sources. The South Coast Air Quality Management District (SCAQMD) also, as amicus curiae in Sierra Club, made similar points, reiterating that “an agency should not be required to perform analyses that do not produce reliable or meaningful results” (SCAQMD 2015). SCAQMD agrees that it is very difficult to quantify health impacts with regard to O₃, opining that the only possible means of successfully doing so is for a project so large that emissions would essentially amount to all regional increases (SCAQMD 2015). With regard to particulate matter, the SCAQMD noted that while the CARB has created a methodology to predict expected mortality from large amount of PM_{2.5}, the primary author of the methodology has reported that it “may yield unreliable results due to various uncertainties” and CARB staff has been directed by its Governing Board to reassess and improve it, which factor “also counsels against setting any hard-and-fast rule” about conducting this type of analysis (SCAQMD 2015).

Because for the foregoing reasons it is not feasible to analyze the health impacts of criteria pollutant emissions at a project level, this SEIR includes qualitative discussions related to the relationship between criteria air pollutants and associated health effects under Impact AQ-2.

Toxic Air Contaminants

California regulates TACs primarily through the Tanner Act (AB 1807) and the Hot Spots Act (AB 2588). The Tanner Act (AB 1807) created California’s program to reduce exposure to air toxics. CARB defines *TACs* as air pollutants that may cause or contribute to an increase in mortality or an increase in serious illness or that may pose a present or potential hazard to human health. CARB has formally identified more than 200 substances and groups of substances as TACs (CARB 2022). Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders. The Hot Spots Act (AB 2588) supplements the AB 1807 program by requiring a statewide air-toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. The California Office of Environmental Health Hazard Assessment (OEHHA) is required to develop guidelines for health risk assessments (HRAs) under the Air Toxics Hot Spots Program. These guidelines provide the scientific basis for the values used to assess the risk of emissions exposure from facilities and new sources (OEHHA 2015).

In August 1998, CARB identified particulate emissions from diesel-fueled engines as TACs. In September 2000, CARB approved a comprehensive diesel risk-reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles. As an ongoing process, CARB reviews air contaminants and identifies those classified as TACs. CARB also continues to establish new programs and regulations for the control of TACs, including DPM, as appropriate.

CARB has adopted diesel exhaust-control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). Over time, the replacement of older vehicles would result in a vehicle fleet that produces substantially lower levels of TACs. Mobile-source emissions of TACs (e.g., benzene, 1,3-butadiene, DPM) have been reduced significantly over the last decade and would be reduced further in California through a progression of regulatory measures (e.g., Low

Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. It is expected that DPM concentrations would continue to decline. Adopted regulations are also expected to continue to reduce formaldehyde emissions emitted by cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions would also be reduced.

CARB developed multiple Air Toxic Control Measures to address specific mobile- and stationary-source categories that can have an impact on the public health of communities. The measures focused on reducing public exposure to DPM and TACs from mobile sources, such as commercial trucks, buses, solid waste-collection vehicles, and cargo-handling equipment at ports. The Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (California Code of Regulations [CCR] Title 13 Section 2485) required heavy-duty trucks with a GVWR greater than 10,000 pounds to not idle the primary engine for more than 5 minutes at any given time or operate an auxiliary power system for more than 5 minutes within 100 feet of a restricted area.

Local

San Joaquin Valley Air Pollution Control District

Criteria Air Pollutants

SJVAPCD is the primary agency responsible for planning to meet NAAQS and CAAQS in the SJVAB, where the project site is located. SJVAPCD works with EPA and CARB to maintain the region's portion of the SIP for ozone and PM_{2.5}. The SIP is a compilation of plans and regulations that govern how the region and state would comply with the federal CAA requirements to attain and maintain the NAAQS for ozone and PM_{2.5}.

SJVAPCD also enforces air quality regulations, educates the public about air quality, and implements a number of programs to provide incentives for the replacement or retrofit of older diesel engines and influence land-use development in the SJVAB.

All projects are subject to adopted SJVAPCD rules and regulations in effect at the time of construction. Specific rules applicable to the project may include but are not limited to the following:

- **Rule 2010** (Permits Required). This rule requires any person constructing, altering, replacing, or operating any source operation that emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate.
- **Rule 2201** (New and Modified Stationary Source Review). This rule requires that sources not increase emissions above the specified thresholds.
- **Rule 2280** (Portable Equipment Registration). This rule requires portable equipment used at project sites for less than 6 consecutive months be registered with SJVAPCD.
- **Rule 2303** (Mobile Source Emission Reduction Credits). This rule encourages joint business ventures and establishes procedures by which emission reduction credits from mobile sources may be certified.
- **Rule 3135**—Dust Control Plan Fee: This rule requires applicants to submit a fee in addition to a dust-control plan. The purpose of this fee is to recover SJVAPCD's cost for reviewing such plans and conducting compliance inspections.

- **Rule 4101**—Visible Emissions: This rule prohibits emissions of visible air contaminants to the atmosphere and applies to any source operation that emits or may emit air contaminants.
- **Rule 4102**—Nuisance: This rule applies to any source operation that emits or may emit air contaminants and/or odors. If such emissions create a public nuisance, the owner/operator could be in violation and subject to enforcement action by SJVAPCD.
- **Rule 4201 and Rule 4202** (Particulate Matter Concentration and Emission Rates). These rules provide PM emission limits for sources operating within the district.
- **Rule 4641**—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations: This rule applies to the manufacture and use of the aforementioned asphalt types for paving and maintenance operations.
- **Rule 9510**—Indirect Source Review: This rule is intended to reduce or mitigate emissions of NO_x and PM₁₀ from the construction- and operation-related emissions of new land-use development in the SJVAPCD. This rule requires a specific percentage reductions in estimated on-site construction and operation emissions and/or payment of a prescribed off-site mitigation fee for required reductions that cannot be met on a project site. Construction emissions of NO_x and PM₁₀ exhaust must be reduced by 20 percent and 45 percent, respectively. Operational emissions of NO_x and PM₁₀ must be reduced by 33.3 percent and 50 percent, respectively.
- **Regulation VIII**—Fugitive Dust PM₁₀ Prohibitions: Rules 8011–8081 are designed to reduce PM₁₀ emissions (predominantly dust and dirt) generated by human activity, including construction, demolition, excavation, extraction, and other earth-moving activities, bulk materials-handling storage, carryout and track-out, open areas, paved and unpaved roads, unpaved vehicle/equipment traffic areas, and agricultural sources. Compliance with Regulation VIII is mandatory, so compliance by the project proponent is assumed in this analysis. Table 3.3-3 contains control measures that the applicants would be required to implement during project construction activities pursuant to Rule 8021, Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities.

If modeled construction- or operation-related emissions for a project exceed SJVAPCD's mass emission thresholds for criteria air pollutants and precursors, then SJVAPCD recommends implementing mitigation to reduce these emissions. SJVAPCD's mass emission thresholds are presented in Section 3.3.2, *Environmental Impacts*.

Toxic Air Contaminants

At the local level, air districts may adopt and enforce CARB control measures. Under SJVAPCD Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), and Rule 2550 (Federally Mandated Preconstruction Review for Major Sources of Air Toxics), all stationary sources that possess the potential to emit TACs are required to obtain permits from SJVAPCD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including New Source Review standards¹ and air toxics-control measures. SJVAPCD limits emissions and public exposure to TACs through multiple programs. SJVAPCD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors.

¹ *New Source Review* is a Clean Air Act program that requires industrial facilities to install modern pollution-control equipment when they are built or when making a change that increases emissions significantly.

Table 3.3-3. SJVAPCD Rule 8021 Measures Applicable to the Project

Number	Measure
A.1	Pre-water site sufficient to limit visible dust emissions (VDE) to 20 percent opacity.
A.2	Phase work to reduce the amount of disturbed surface area at any one time.
B.1	Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20 percent opacity; or
B.2	Construct and maintain wind barriers sufficient to limit VDE to 20 percent opacity. If using wind barriers, control measure B.1 above shall also be implemented.
B.3	Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20 percent opacity and meet the conditions of a stabilized unpaved road surface.
C.1	Restrict vehicular access to the area.
C.2	Apply water or chemical/organic stabilizers/suppressants, sufficient to comply with the conditions of a stabilized surface. If an area having 0.5 acre or more of disturbed surface area remains unused for seven or more days, the area must comply with the conditions for a stabilized surface area as defined in section 3.58 of Rule 8011.
5.3.1	An owner/operator shall limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.
5.3.2	An owner/operator shall post speed limit signs that meet state and federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance. At a minimum, speed limit signs shall also be posted at least every 500 feet and shall be readable in both directions of travel along uncontrolled unpaved access/haul roads.
5.4.1	Cease outdoor construction, excavation, extraction, and other earthmoving activities that disturb the soil whenever VDE exceeds 20 percent opacity. Indoor activities such as electrical, plumbing, dry wall installation, painting, and any other activity that does not cause any disturbances to the soil are not subject to this requirement.
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 SJVAPCD, SJVAPCD does not provide any comments to the owner/operator regarding the Dust Control Plan.

Source: SJVAPCD Rule 8021.

Odors

Although odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and SJVAPCD. SJVAPCD Rule 4102 (Nuisance) regulates odorous emissions.

Merced County

2030 Merced County General Plan

Relevant policies and standards from the Air Quality Element of the *2030 Merced County General Plan* are provided below (County of Merced 2013).

- **Goal AQ-1.** Reduce air pollutants and greenhouse gas emissions and anticipate adaptation due to future consequences of global and local climate change.
 - **Policy AQ-1.1:** Energy Consumption Reduction. Encourage new residential, commercial, and industrial development to reduce air quality impacts from energy consumption.
 - **Policy AQ-1.5:** Climate Action Plan. Prepare a Climate Action Plan that includes an inventory of 1990 and 2010 greenhouse gas emissions, determines project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD, and identify strategies to achieve State emission reduction targets.
 - **Policy AQ-1.6:** Air Quality Improvement. Support and implement programs to improve air quality throughout the County by reducing emissions related to vehicular travel and agricultural practices.
 - **Policy AQ-1.11:** Truck-Related Development. Discourage development that causes significant increases in truck traffic on roads that are not capable of accommodating truck traffic due to pavement section deficiency or other capacity limitations, unless adequate mitigation through fees or improvements is required as part of the permit approval.
- **Goal AQ-2.** Mitigate significant local and regional air quality impacts of projects through the CEQA [California Environmental Quality Act] process.
 - **Policy AQ-2.1:** Air Quality Plan Compliance. Require all development projects to comply with applicable regional air quality plans and policies.
 - **Policy AQ-2.2:** Development Review Process. Use the development review process to achieve measurable reductions in criteria pollutant, toxic air contaminants, and greenhouse gas emissions.
 - **Policy AQ-2.3:** Cumulative Impacts. Encourage the reduction of cumulative air quality impacts produced by projects that are not significant by themselves but result in cumulatively significant impacts in combination with other development.
 - **Policy AQ-2.4:** Mitigation. Require that local and regional air quality impacts identified during CEQA review for projects reviewed and approved by the County are consistently and fairly mitigated.
 - **Policy AQ-2.5:** Innovative Mitigation Measures. Encourage innovative mitigation measures and project redesign to reduce air quality impacts by coordinating with the San Joaquin Valley Air Pollution Control District, project applicants, and other interested parties.

- **Policy AQ-2.7:** Air District Best Performance Standards. Require the County to use the Best Performance Standards adopted by SJVAPCD during the development review and decision-making process to ensure new projects meet the targets set by [SJVAPCD].
- **Goal AQ-6.** Improve air quality in Merced County by reducing emissions of PM₁₀, PM_{2.5}, and other particulates from mobile and non-mobile sources.
 - **Policy AQ-6.1:** Particulate Emissions from Construction. Support the San Joaquin Valley Air Pollution Control District's efforts to reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible and consistent with State and federal regulations.
 - **Policy AQ-6.2:** Emissions from County Roads. Require PM₁₀ and PM_{2.5} emission reductions on County-maintained roads to the maximum extent feasible and consistent with State and Federal regulations.
 - **Policy AQ-6.3:** Paving Materials. Require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.
 - **Policy AQ-6.5:** Industrial Best Management Practices. Require industrial facilities to incorporate economically feasible Best Management Practices and control technology to reduce PM₁₀ and PM_{2.5} emissions consistent with State and Federal regulations.
 - **Policy AQ-6.8:** Voluntary Emissions Reduction Agreement. Require all project applicants, where project emissions for any criteria pollutant have been evaluated to exceed SJVAPCD significance thresholds, to consult with the SJVAPCD regarding the establishment of a Voluntary Emissions Reduction Agreement between the applicant and the SJVAPCD. Support the SJVAPCD in its efforts to fund the Emission Reduction Incentive Program.

Villages of Laguna San Luis Community Plan

The Villages of Laguna San Luis Community Plan (Community Plan), adopted in September 2008, provides a long-range growth and development plan for approximately 6,200 acres of land west of Interstate 5 along SR 152 and SR 33 in western Merced County (County 2008), including a portion of the solar project site, and all of the off-site residential redesignation area. The Community Plan includes policies and guidance for the establishment of a new community that can accommodate growth and market demands, all while ensuring adequate public services and facilities as well as compatibility with surrounding environment. The Community Plan includes the following goal that is applicable to GHGs:

- **Goal 3.0:** Develop a community that is responsive to its natural setting and promotes the conservation of water and non-renewable resources and minimizes pollutant emissions.

3.3.2 Environmental Impacts

This section describes the proposed project's potential impacts on air quality. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

As discussed in Chapter 2, *Project Description*, water for project construction and operation would either be supplied by the San Luis Water District (SLWD) through existing connections to the solar project site or transported to the solar project site via 4,000-gallon water trucks from the Mid-Cal well located adjacent to SR 33 at the northwest corner of AKT's Mid-Cal property, approximately 4.4 miles north of the solar project site. The method that is ultimately implemented will depend on which approvals are granted. For purposes of the air quality analysis, the Mid-Cal well option is assumed because it would represent a worst-case analysis due to the required truck trips.

Methods for Analysis

A Draft Air Quality Technical Report (AQR) was prepared to estimate criteria air pollutants and precursors, TACs, and odors, as well as GHG emissions, associated with construction and operation of the project (Appendix 3.3-1). Emissions associated with construction and operation of the project were estimated using information about the phasing of construction activities, the types and numbers of equipment that would be used, the number of employees, and the frequency of maintenance activities during project operations, as provided by EDPR, emission factors from the California Emissions Estimator Model (CalEEMod) Version 2020.4.0 computer program and CARB's Web-Based Mobile-Source Emission Factor Model (EMFAC2021; CARB 2021a); and equations and methodologies consistent with CalEEMod (CAPCOA 2020). Emissions of criteria air pollutants and precursors, TACs, and odors were assessed in accordance with SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015b). A summary of the methodology is provided in this section. Detailed model assumptions and inputs for these calculations can be found in Attachment A to the AQR, *Air Quality and Greenhouse Gases Modeling Files*.

Mass Emissions Modeling

Construction

Construction activities for the project would occur within and under the jurisdiction of the SJVAPCD. Construction activities in the SJVAPCD would generate emissions of criteria pollutants (ROG, NO_x, CO, PM₁₀, PM_{2.5}, and sulfur oxides [SO_x]) and diesel particulate matter (DPM) that would result in short-term effects on ambient air quality in the study area. Emissions would originate from off-road equipment exhaust, employee and haul truck vehicle exhaust (on-road vehicles), and site grading and earth movement. These emissions would be temporary (i.e., limited to the construction period) and would cease when construction activities are complete. As a project commitment, the solar project and the PG&E substation improvements would require construction contractors to use Tier 4 Final engines greater than 25 horsepower for off-road equipment to reduce construction-related exhaust emissions.

Emissions estimates for construction of the project were based on a combination of engineering inputs and model defaults. Total emissions from construction of the project are presented at the maximum daily and annual time scales and compared with SJVAPCD construction thresholds.

- **Off-Road Equipment:** Emission factors for off-road construction equipment (e.g., loaders, graders, bulldozers, generators) were obtained from the *CalEEMod (version 2020.4.0) User's Guide* appendix, which provides values per unit of activity (in grams per horsepower-hour) by calendar year (CAPCOA 2020). Criteria pollutants were estimated by multiplying the CalEEMod emission factors by the equipment inventory provided by the project applicant (EDPR 2022).

- **On-Road Vehicles:** On-road vehicles (e.g., pickup trucks, flatbed trucks, water trucks) would be required for material and equipment hauling, on-site crew and material movement, and employee commuting. Exhaust emissions from on-road vehicles were estimated using the EMFAC2021 emissions model and activity data provided by the project applicant (EDPR 2022). Emission factors for haul trucks are based on aggregated-speed emission rates for EMFAC's "HHDT" vehicle category. Factors for on-site water and vendor trucks were based on 15 miles per hour (mph) emission rates for the MHDT and HHDT category, and factors for on-site pickup trucks are based on 15 mph emission rates for the light-heavy duty truck (LHDT) categories, respectively. Factors for employee commute vehicles are based on a weighted average for all vehicle speeds for EMFAC's light-duty auto/LDT vehicle categories. Fugitive re-entrained road dust emissions were estimated using USEPA's *Compilation of Air Pollutant Emission Factors* (AP-42), Sections 13.2.1 and 13.2.2 (EPA 2006 and 2011).
- **Site Grading and Earth Movement:** Fugitive dust emissions from earth movement (i.e., site grading, bulldozing, and truck loading) were quantified using emission factors from CalEEMod and USEPA's AP-42 (EPA 1998a and 2006). Data on the total graded acreage and quantity of cut-and-fill material were provided by the project applicant (EDPR 2022).

Operation

Operational activities for the project would occur within and under the jurisdiction of the SJVAPCD. Operational activities in the SJVAPCD would generate emissions of criteria pollutants (ROG, NO_x, CO, PM₁₀, PM_{2.5}, and sulfur oxides [SO_x]) that would result in long-term effects on ambient air quality in the study area. Emissions would originate from employee and water truck vehicle exhaust (on-road vehicles) and testing and maintenance of the on-site propane-fueled emergency generator.

Emissions estimates for operation of the project were based on a combination of engineering inputs and model defaults. Total emissions from operation of the project are presented at the maximum daily and annual time scales and compared with SJVAPCD operational thresholds.

- **On-Road Vehicles:** On-road vehicles (e.g., pickup trucks, water trucks) would be required for material and equipment hauling, on-site crew and material movement, and employee commuting. Exhaust emissions from on-road vehicles were estimated using the EMFAC2021 emissions model and activity data provided by the project applicant (EDPR 2022). Factors for on-site water trucks were based on 15 miles per hour (mph) emission rates for the MHDT and HHDT category, and factors for on-site pickup trucks are based on 15 mph emission rates for the light-heavy duty truck (LHDT) categories, respectively. Factors for employee commute vehicles are based on a weighted average for all vehicle speeds for EMFAC's light-duty auto/LDT vehicle categories. Fugitive re-entrained road dust emissions were estimated using USEPA's *Compilation of Air Pollutant Emission Factors* (AP-42), Sections 13.2.1 and 13.2.2 (EPA 2006 and 2011).
- **Emergency Generator:** Exhaust emissions from the proposed on-site propane-fueled emergency generator were quantified using emission factors from CalEEMod (CAPCOA 2020). The horsepower for the generator was provided by the project applicant (EDPR 2022). The generator was conservatively assumed to be tested for a maximum of one hour per day and 50 hours per year.

Carbon Monoxide Hot Spot Analysis

The SJVAPCD's GAMAQI (2015) outlines screening criteria to evaluate potential CO hot-spots. The criteria provide a conservative indication of whether a project will generate new air quality violations, worsen existing violations, or delay attainment of the CAAQS for CO. A quantitative analysis of project-related CO emissions would not be necessary and the project would result in a less-significant-impact with respect to CO so long as it would not 1) worsen the level of service (LOS) at intersections currently operating under LOS F or 2) reduce LOS at one more intersections in the project vicinity to LOS E or F.

Construction Health Risk Assessment and Ambient Air Quality Analysis

The level of health risk from exposure to TACs emitted during project construction and operation was assessed based on an HRA that was conducted in accordance with SJVAPCD guidance (SJVAPCD 2006, 2015a, 2015c, 2022), the CARB-approved American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee modeling system (AERMOD) (EPA 2016), and California Office of Environmental Health and Hazard Assessment's Hotspots Analysis and Reporting Program, Version 2 (OEHHA 2015). Diesel-powered engines would generate PM₁₀ in the form of DPM, which is classified as a TAC by CARB. The HRA was based on the level of DPM that would be emitted by heavy equipment and haul trucks during project construction and operation, the location of off-site sensitive receptors within 1,000 feet of the project site, the possible duration of potential DPM exposure, and meteorological data from the meteorological station in Los Banos.

The HRA consists of three parts—an emissions inventory, air dispersion modeling, and risk calculations. The emissions inventory method for DPM is provided above under *Methods for Analysis*, "Mass Emissions Modeling." Methods and assumptions for the air dispersion modeling and risk calculations are presented below.

Air Dispersion Modeling

The HRA used EPA's AERMOD model, version 22112, to model annual average DPM concentrations at nearby receptors. Modeling inputs, including emission rates in grams of pollutant emitted per second, and source characteristics (e.g., release height, stack diameter, plume width) were based on guidance provided by OEHHA (2015) and SJVAPCD (2022). Los Banos is the nearest monitoring station with surface data; the station is 7 miles east of the project site. NED 1 Arc-Second (approximately 30-meter) terrain data for the project area were inputted into the model using the AERMAP tool, including height information. AERMOD's rural dispersion option was used in the analysis, given the rural nature of the project area.

Receptors were modeled using a network of discrete receptors, both at observed residential locations (for the DPM HRA) and along the fence line (for the CO ambient air quality analysis), the closest location with public access to ambient air. The closest observed residential and recreational locations were modeled using a 20- by 20-meter grid. To represent the ambient air boundary, receptors were placed along the fence line at 20-meter increments.

Emissions associated with construction equipment were treated as area polygon sources equal to the size of the project boundary. Exhaust emissions from on-site construction equipment were modeled with a release height of 5 meters and an initial vertical dimension of 1.4 meters, consistent with construction air dispersion modeling recommendation by the Bay Area Air Quality Management District (BAAQMD) (2012), Sacramento Metropolitan Air Quality Management District (SMAQMD) (2013), and SCAQMD (2008).

Emissions associated with truck movements near the project site would occur primarily along the following paved and unpaved roads: San Luis Drive and a short unpaved road connecting San Luis Drive to the project site. These roads were treated as line area sources to represent the travel path to and from the project site. Following EPA haul road guidance (EPA 2012b), the initial vertical dimension was set to 3.16 meters; the release height was set to 3.4 meters, or approximately 11.15 feet.

Because construction is expected to occur during daytime hours only, only daytime meteorology was assumed. The “hour of day” function in AERMOD was used to represent 8 hours of continuous construction equipment emissions every day, 5 days a week (7:00 a.m. to 3:00 p.m.). Workers would be required to take breaks and follow CCR Section 2485, which limits vehicle idling to no more than 5 minutes.

Risk Calculations

The risk calculations incorporated OEHHA’s (2015) age sensitivity factors, which account for increased sensitivity to carcinogens during early-in-life exposure. The approach for estimating cancer risk from long-term inhalation, including exposure to carcinogens, requires calculating a range of potential doses and multiplying by cancer potency factors in units corresponding to the inverse dose to obtain a range of cancer risks. For cancer risk, the risk for each age group is calculated using the appropriate daily breathing rates, age sensitivity factors, and exposure durations. The cancer risks calculated for individual age groups are summed to estimate the cancer risk for each receptor. Chronic cancer and hazard risks were calculated using values from OEHHA’s 2015 HRA guidance.

The health risk factors used in the construction assessment are representative of the “0-<2” age bin. For each modeled receptor, the modeled annual concentration from AERMOD was multiplied by the calculated factor and 1 million to obtain the cancer risk, in chances per million.

Proposed project construction is assumed to last 14 months, beginning in April 2024. For the HRA, it is conservatively assumed that nearby residents may be exposed for 2 calendar years within the “0-<2” age bin, which has the highest breathing rate of any age bin.² The “fraction of time at home” was set at the default value of 0.85 because no schools are within the 1 in 1 million cancer risk isopleth for the project. These assumptions were input into the CARB HARP RAST tool to calculate construction-related health risks.

Inputs, outputs, modeling assumptions, and calculations for the dispersion modeling and health-risk analysis for the HRA can be found in Attachment B to the AQR, *Health Risk Assessment*.

Operational Health Risk Assessment

All inputs and parameters used in AERMOD for the construction HRA apply to the operational HRA, which includes emissions of DPM associated with annual solar panel cleaning. Off-road equipment and on-road vehicles would conduct the solar panel cleaning activities.

For the calculation of health risks, using CARB’s HARP RAST tool, operational HRA used health risk factors associated with the 2-<16 and 16-<30 age bins. The “fraction of time at home” was set at the default values of 0.72 and 0.73 for the 2-<16 and 16-<30 age bins because no schools are within the 1 in 1 million cancer risk isopleth for the project.

Inputs, outputs, modeling assumptions, and calculations for the dispersion modeling and analysis for the HRA can be found in Attachment B to the AQR, *Health Risk Assessment*.

Odors

The assessment of odor-related impacts is based on the types of odor sources associated with construction and operation of the project, their location relative to off-site receptors, and the likelihood of resulting in odor complaints.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

Except as provided in Public Resources Code Section 21099, would the project:

- Conflict with or obstruct implementation of the applicable air quality plan?
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?
- Expose sensitive receptors to substantial pollutant concentrations?
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

In its March 2015 *Guide for Assessing and Mitigating Air Quality Impacts* (CEQA Guide), SJVAPCD provides evidence to support the development and applicability of its thresholds of significance for project-generated emissions of criteria air pollutants and precursors, which may be used at the discretion of a lead agency overseeing the environmental review of projects located within the SJVAB. As stated in the CEQA Guide, “a Lead Agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the Lead Agency to adopt such thresholds is supported by substantial evidence” (SJVAPCD 2015b). CEQA-related air quality thresholds of significance are tied to achieving or maintaining attainment designations with respect to NAAQS and CAAQS for criteria air pollutants, which are scientifically substantiated, numerical concentrations considered to be protective of human health.

SJVAPCD identified numerical thresholds for construction- and operation-related emissions of criteria air pollutants and precursors that would determine whether a project’s discrete emissions would result in a cumulative, regional contribution (i.e., significant) to the baseline nonattainment status of SJVAPCD. In developing thresholds of significance for individual project emissions, SJVAPCD analyzed emissions values against the SJVAPCD’s offset thresholds to ozone precursors, which, when applied, prevent further deterioration of ambient air quality in the SJVAB. Thresholds for PM₁₀ and PM_{2.5} were adapted from the SJVAPCD’s PM₁₀ New Source Review offset thresholds for stationary sources (SJVAPCD 2015b). Using these parameters, SJVAPCD developed quantitative thresholds of significance for project-level CEQA evaluation that may be used to determine the extent to which a project’s emissions of criteria air pollutants and precursors would contribute to the regional degradation of ambient air quality within the SJVAB.

Using federal and state guidance pertaining to TACs, in addition to the findings of several scientific studies, SJVAPCD developed cancer risk and noncancer health hazard thresholds for TAC exposure. Unlike criteria air pollutants, there is no known safe concentration of TACs with respect to cancer risk. Moreover, TAC emissions contribute to the deterioration of localized air quality but, due to the dispersion characteristics of TACs, emissions generally do not cause regional-scale air-quality impacts. SJVAPCD’s thresholds are designed to ensure that a source of TACs does not contribute to a localized, significant impact on existing or new receptors.

As such, for the purpose of this project, the following thresholds of significance are used to determine if project-generated emissions would produce a significant localized and/or regional air quality impact such that human health would be adversely affected. Based on Appendix G of the State CEQA Guidelines and SJVAPCD recommendations (SJVAPCD 2015b), the project would result in a potentially significant impact on air quality if it would result in emissions of criteria air pollutants or precursors that would conflict with or obstruct air quality-planning efforts, result in a cumulatively considerable net increase of any criteria air pollutant for which the SJVAB has been designated as nonattainment with respect the applicable NAAQS or CAAQS, or expose sensitive receptors to substantial pollutant concentrations. SJVAPCD (2015b) considers these criteria to be exceeded if a project's construction- or operation-related emissions would exceed its annual thresholds of:

- ROG or NO_x – 10 tons per year
- CO – 100 tons per year
- SO_x – 27 tons per year
- PM₁₀ or PM_{2.5} – 15 tons per year

In addition, if emissions of any of these pollutants would exceed a screening criterion of 100 pounds per day (lb/day), SJVAPCD requires site-specific ambient air-quality analysis to determine whether the project would result in a localized exceedance or cumulatively considerable contribution to an exceedance of a NAAQS or CAAQS (SJVAPCD 2015b); and/or expose sensitive receptors to a substantial incremental increase in TAC emissions that exceed 20 in 1,000,000 for carcinogenic risk (i.e., the risk of contracting cancer) and/or a noncarcinogenic hazard index of 1.0 or greater (SJVAPCD 2015b).

Regarding the threshold of significance for odors, SJVAPCD's CEQA Guide states that any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact (SJVAPCD 2015b). This is mostly consistent with the odor question in CEQA Appendix G, which was revised as part of the 2019 update: "result in other emissions (such as those leading to odors) adversely affecting a substantial number of people." However, whereas the SJVAPCD CEQA Guide focuses on frequency of odor exposure, Appendix G focuses on number of people affected. To remain consistent with the 2021 CEQA Guidelines, the threshold of significance used in this analysis is based on CEQA Appendix G, which asks whether a project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Impacts and Mitigation Measures

Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan?
(With implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts to air quality that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.12-1 and 5.12-2 on pages 5.12-18—5.12-28 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that construction equipment mass emissions of ozone precursors (ROG and NO_x) could exceed SJVAPCD's significance thresholds whereas construction mass

emissions of fugitive dust and PM₁₀ would be less than significant. Community Plan Mitigation Measures 5.12-1a, 5.12-1b, and 5.12-1c were prescribed to mitigate this impact. The Community Plan EIR also found that operational mass emissions of ozone precursors (ROG and NO_x) and PM₁₀ would exceed SJVAPCD's significance thresholds. Community Plan Mitigation Measures 5.12-2a, 5.12-2b, and 5.12-2c were prescribed to mitigate this impact. Ultimately, the Community Plan EIR concluded that impacts to air quality would be significant and unavoidable after implementation of mitigation.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from single-family residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct generation of criteria pollutant emissions and precursors. While the proposed off-site residential redesignation would increase the planned density within the residential redesignation area, it would not change the overall medium-density/high-density residential capacity of the approved Community Plan. Instead, it would redistribute already approved medium-density/high-density residential capacity to a different area within the Community Plan area. Because the off-site residential redesignation would not directly or indirectly result in increased development, it is not expected to generate emissions beyond those considered in the Community Plan EIR. In addition, implementation of improved emissions standards associated with construction equipment and vehicles since certification of the Community Plan EIR has led to cleaner and more efficient construction equipment and vehicles. Also, implementation of improved emissions standards and improvements in vehicle technology in general since certification of the Community Plan EIR has led to cleaner and more efficient vehicles for many vehicle types. Consequently, construction and operational emissions estimates for current and future development in the Community Plan EIR would be considered conservative in nature. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. The significant and unavoidable impact on air quality was disclosed in the Community Plan EIR as part of approval of the Community Plan. The proposed off-site residential redesignation would not increase the amount of development associated with buildout of the Community Plan, and as a result would not increase emissions beyond those considered in the Community Plan EIR. Therefore, ***with implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.***

Construction, Operation, and Decommissioning

In its *Guidance for Assessing and Mitigating Air Quality Impacts* (2015b), SJVAPCD states that projects that would generate emissions of criteria air pollutants and precursors that do not exceed SJVAPCD-established mass emission thresholds would “not conflict or obstruct implementation of the District’s air quality plan” (SJVAPCD 2015b). As shown under Impact AQ-2, emissions of criteria air pollutants and precursors generated by construction of the solar project would not exceed the applicable annual mass emission threshold recommended by SJVAPCD (as shown in Table 3.3-4).

Table 3.3-4. Annual Construction-Generated Emissions of Criteria Air Pollutants and Precursors with Tier 4 Final Engines and Regulation VIII Measures

Construction Phase(s)	Projected Timing		Emissions (tons)					
	Start	End	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Site Preparation	4/2024	9/2024	0.1	4.3	3.3	0.0	2.4	0.5
Underground Work	5/2024	3/2025	0.6	1.8	11.9	0.0	1.7	0.5
PV System Installation	5/2024	3/2025	0.8	2.7	22.5	0.0	4.6	1.1
Battery Storage System Installation	10/2024	4/2025	0.3	0.4	4.7	0.0	1.7	0.3
Substation and Gen-Tie Line Installation	10/2024	4/2025	0.3	1.0	5.1	0.0	2.0	0.4
PG&E Substation Improvements	10/2024	5/2025	0.0	0.4	1.7	0.0	0.8	0.1
Testing and Commissioning + Project Site Restoration	5/2025	5/2025	0.0	0.1	0.3	0.0	0.3	0.0
2024 Construction Emissions			1.4	8.2	33.2	0.1	8.4	1.6
2025 Construction Emissions			0.8	2.2	15.9	0.0	4.4	0.7
SJVAPCD Annual Mass Emission Thresholds			10	10	100	27	15	15
Exceeds Threshold?			No	No	No	No	No	No

Source: Modeling details and output provided in Attachment A to the AQR.

Note: Totals may not add exactly due to rounding.

SJVAPCD = San Joaquin Valley Air Pollution Control District; ROG = reactive organic gases; age system; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = oxides of sulfur; PM₁₀ = respirable particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = fine particulate matter with an aerodynamic diameter of 2.5 microns or less; PV = photovoltaic.

The phases that could contribute to annual emissions in 2024 include site preparation, underground work, PV system installation, battery storage system installation, substation and gen-tie line installation, and PG&E substation modifications. Phases that could contribute to annual emissions in 2025 include underground work, PV system installation, battery storage system installation, substation and gen-tie line installation, PG&E substation modifications, and testing, commissioning, and project site restoration. Although maximum daily construction-generated emissions of CO would exceed SJVAPCD’s daily threshold for requiring a site ambient air quality analysis (AAQA) (as shown in Table 3.3-5), CO concentrations would be below the CAAQS and NAAQS for CO (as shown in Table 3.3-6). Maximum daily emissions of ROG, CO, PM₁₀, and PM_{2.5} would occur during the overlap of the underground work, PV system installation, battery storage system installation, substation and gen-tie line installation, and PG&E substation modifications phases. Maximum daily emissions of NO_x and SO_x would occur during the overlap of the site preparation, underground work, and PV system installation phases. Also, the project would implement fugitive dust-control measures pursuant to SJVAPCD Regulation VIII, as

required by Community Plan Mitigation Measures 5.12-1b and 5.12-1c. Community Plan Mitigation Measures 5.12-1a would not be required for the solar project because solar facilities are not subject to SJVAPCD’s Indirect Source Review (ISR) rule. Moreover, as shown under Impact AQ-2, operational emissions of criteria air pollutants and precursors would not exceed the applicable annual mass-emission threshold recommended by SJVAPCD (as shown in Table 3.3-7); maximum daily operational emissions of criteria air pollutants and precursors would not exceed SJVAPCD’s daily thresholds for requiring a site AAQA be conducted (as shown in Table 3.3-8). Community Plan Mitigation Measures 5.12-2a, 5.12-2b, and 5.12-2c would not be required for the solar project because they only apply to tentative maps under the Community Plan. Emissions generated from decommissioning activities are expected to be less than solar project construction emissions and it is expected that emissions of criteria air pollutants and precursors associated with decommissioning of the solar project would not exceed SJVAPCD-established annual mass-emission thresholds or daily emissions-screening criteria. Therefore, emissions of criteria air pollutants and precursors generated by construction, operation, and decommissioning of the project would not conflict with air-quality planning efforts in the SJVAB.

The Community Plan EIR anticipated that buildout of the Community Plan would considerably exceed SJVAPCD’s construction and operational thresholds for ROG and NO_x emissions, as well as present a significant and unavoidable impact with regard to operational PM₁₀ emissions. (See Community Plan EIR Impacts 5.12-1 and 5.12-2). Impacts from construction, operation, and decommissioning of the solar project would be less than significant and would not exceed the significant and unavoidable impact identified in the Community Plan EIR. Therefore, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Table 3.3-5. Maximum Daily Construction-Generated Emissions of Criteria Air Pollutants and Precursors with Tier 4 Final Engines and Regulation VIII Measures

Construction Phase	Projected Timing		Daily Emissions per Phase (pounds per day)					
	Start	End	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Site Preparation	4/2024	9/2024	1.8	54.5	42.2	0.5	29.2	5.9
Underground Work	5/2024	3/2025	4.1	12.5	82.8	0.2	10.7	2.8
PV System Installation	5/2024	3/2025	5.4	18.7	157.0	0.3	29.7	4.9
Battery Storage System Installation	10/2024	4/2025	3.3	4.9	52.1	0.1	18.7	3.3
Substation and Gen-Tie Line Installation	10/2024	4/2025	3.5	8.7	51.4	0.1	21.1	3.6
PG&E Substation Improvements	10/2024	5/2025	0.5	3.4	16.0	0.0	7.7	0.9
Testing and Commissioning + Project Site Restoration	5/2025	5/2025	0.7	4.2	21.0	0.0	20.2	2.3
Maximum Daily Construction Emissions			16.8	85.8	359.3	1.0	87.9	15.5
SJVAPCD Screening Criteria			100	100	100	100	100	100
Exceeds Screening Threshold?			No	No	Yes	No	No	No

Source: Modeling details and output provided in Attachment A to the AQR.

Note: Total may not add exactly due to rounding.

SJVAPCD = San Joaquin Valley Air Pollution Control District; ROG = reactive organic gases; age system; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = oxides of sulfur; PM₁₀ = respirable particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = fine particulate matter with an aerodynamic diameter of 2.5 microns or less; PV = photovoltaic.

Table 3.3-6. Construction Carbon Monoxide AAQA Concentration Results

CO Concentration (µg/m ³)	1-hour Average		8-hour Average	
	CAAQS	NAAQS	CAAQS	NAAQS
Maximum Incremental Off-Site	337	301	50	48
Background ¹	3335	2530	2185	2070
Total Off-Site	3672	2831	2235	2118
Standard (µg/m ³ equivalent)	23,000	40,000	10,000	10,000

¹ Background concentrations from the Modesto air quality monitoring station at 814 14th Street from 2019– 2021. Source: Modeling output provided in Attachment A to the AQR.

Note: Total may not add exactly due to rounding.

CAAQS = California Ambient Air Quality Standards; NAAQS = National Ambient Air Quality Standards; µg/m³ = micrograms (one-millionth of a gram) per cubic meter air.

Table 3.3-7. Annual Operational Emissions of Criteria Air Pollutants and Precursors

Source Category	Annual Emissions (tons per year)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Employee Vehicle Trips	<0.1	<0.1	0.2	<0.1	1.3	0.1
Water Truck Trips	<0.1	<0.1	<0.1	<0.1	0.8	0.1
Emergency Generator	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Project Total	<0.1	0.1	0.3	<0.1	2.2	0.2
SJVAPCD Significance Thresholds	10	10	100	27	15	15
Exceeds Threshold?	No	No	No	No	No	No

Source: Modeling details and output provided in Attachment A to the AQR.

Note: Total may not add exactly due to rounding.

SJVAPCD = San Joaquin Valley Air Pollution Control District; ROG = reactive organic gases; age system; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = oxides of sulfur; PM₁₀ = respirable particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = fine particulate matter with an aerodynamic diameter of 2.5 microns or less.

Table 3.3-8. Maximum Daily Operational Emissions of Criteria Air Pollutants and Precursors

Source Category	Daily Emissions (pounds per day)					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Employee Vehicle Trips	0.1	0.2	1.1	<0.1	7.3	0.8
Water Truck Trips	0.1	4.0	1.2	<0.1	81.8	8.3
Emergency Generator	0.6	0.1	1.5	<0.1	<0.1	<0.1
Project Total	0.8	4.3	3.9	<0.1	89.2	9.0
SJVAPCD Screening Criteria	100	100	100	100	100	100
Exceeds Screening Threshold?	No	No	No	No	No	No

Source: Modeling output provided in Attachment A to the AQR.

Note: Total may not add exactly due to rounding.

SJVAPCD = San Joaquin Valley Air Pollution Control District; ROG = reactive organic gases; age system; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = oxides of sulfur; PM₁₀ = respirable particulate matter with an aerodynamic diameter of 10 microns or less; PM_{2.5} = fine particulate matter with an aerodynamic diameter of 2.5 microns or less.

Additional Proposed Development Outside of the Community Plan

Solar Project

Emissions associated with the portion of the solar project located on the lands outside of the Community Plan are included in the analysis and figures above.

Off-Site Mitigation Site

As stated above, projects that would generate emissions of criteria air pollutants and precursors that do not exceed SJVAPCD-established mass emission thresholds would not conflict with air-quality planning efforts in the SJVAB. As described under Impact AQ-2 and Impact AQ-3, emissions generated by establishing and off-site mitigation site would not be expected to exceed the applicable SJVAPCD thresholds for criteria air pollutants and precursors, as well as TACs. As a result, emissions of criteria air pollutants and precursors generated by the off-site mitigation site would not conflict with air-quality planning efforts in the SJVAB. Impacts from the off-site mitigation site would be less than significant and would not exceed the significant and unavoidable impact identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

As stated above, projects that would generate emissions of criteria air pollutants and precursors that do not exceed SJVAPCD-established mass emission thresholds would not conflict with air-quality planning efforts in the SJVAB. As described under Impact AQ-2 and Impact AQ-3, emissions generated by the proposed PG&E substation improvements, which were included in the modeling, would not exceed the applicable SJVAPCD thresholds for criteria air pollutants and precursors, as well as TACs. As a result, emissions of criteria air pollutants and precursors generated by the proposed PG&E substation improvements would not conflict with air-quality planning efforts in the SJVAB. Impacts from the PG&E substation improvements would be less than significant and would not exceed the significant and unavoidable impact identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

For construction, adding together the criteria pollutant emissions generated by the solar project, PG&E improvements, and off-site mitigation site to the off-site residential redesignation would not result in a substantially increased significant impact compared to that analyzed in the Community Plan EIR. Construction emissions from the off-site mitigation site would be very minimal compared to either the solar project or the PG&E substation improvements. In addition, because there is no proposed development at the off-site redesignation site area, those previously identified impacts would not combine with the construction-related emissions from either the solar project, PG&E substation improvements, or off-site mitigation site.

For operations, as shown in Table 3.3-7, whole project criteria pollutant emissions are minimal and would not result in a substantially increased significant impact even if entirely added to the Community Plan EIR emissions. In addition, Community Plan EIR criteria pollutant emissions estimates can be considered conservative due to implementation of improved emissions standards and improvements in vehicle technology since certification of the Community Plan EIR.

Impacts from future development within the off-site residential redesignation area would continue to be significant and unavoidable but would not exceed the significant and unavoidable impact identified in the Community Plan EIR.

Based on this analysis, impacts from the whole project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, would be significant and unavoidable but would not exceed the significant and unavoidable impact identified in the Community Plan EIR. ***No new or substantially more severe significant impacts beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard? (With implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts to air quality that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.12-1 and 5.12-2 on pages 5.12-18—5.12-28 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that construction equipment mass emissions of ozone precursors (ROG and NO_x) could exceed SJVAPCD's significance thresholds whereas construction mass emissions of fugitive dust and PM₁₀ would be less than significant. Community Plan Mitigation Measures 5.12-1a, 5.12-1b, and 5.12-1c were prescribed to mitigate this impact. The Community Plan EIR also found that operational mass emissions of ozone precursors (ROG and NO_x) and PM 10 would exceed SJVAPCD's significance thresholds. Community Plan Mitigation Measures 5.12-2a, 5.12-2b, and 5.12-2c were prescribed to mitigate this impact. Ultimately, the Community Plan EIR concluded that impacts to air quality would be significant and unavoidable after implementation of mitigation.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay Zone. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from single-family residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct generation of criteria pollutant emissions and precursors. While the proposed off-site residential redesignation would increase the planned density within the residential redesignation area, it would not change

the overall medium-density/high-density residential capacity of the approved Community Plan. Instead, it would redistribute already approved medium-density/high-density residential capacity to a different area within the Community Plan area. Because the off-site residential redesignation would not directly or indirectly result in increased development, it is not expected to generate emissions beyond those considered in the Community Plan EIR. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. The significant and unavoidable impact on air quality was disclosed in the Community Plan EIR as part of approval of the Community Plan. The proposed off-site residential redesignation would not increase the amount of development associated with buildout of the Community Plan, and as a result would not increase emissions beyond those considered in the Community Plan EIR. Therefore, no new significant impacts or substantial increases to previously identified significant impacts would result from the proposed off-site residential redesignation compared to those identified in the Community Plan EIR, and no additional mitigation would be required. Therefore, ***with implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.***

Construction

Construction of the project would result in emissions of criteria air pollutants and precursors from off-road equipment operating during the construction period. Criteria air pollutants and precursors would also be emitted by trucks hauling equipment, water, and materials to and from the project site and by worker commute trips. Fugitive PM₁₀ and PM_{2.5} dust emissions would also be generated by equipment and vehicles traveling on unpaved areas of the site, as well as excavation and grading activity. Fugitive-dust emissions would be primarily associated with site preparation and grading and vary as a function of soil silt content, soil moisture, wind speed, and area of disturbance.

Tables 3.3-4 and 3.3-5 summarize the estimated annual and maximum daily levels of criteria air pollutants and precursors that would be emitted during the projected 14-month construction period, respectively. These estimates are broken down by the timing of various construction phases (or the combination of construction phases that would likely overlap in timing). Detailed modeling input and parameters, assumptions, and emissions estimates are provided in Attachment A to the AQR. For ease of presentation, emissions associated with the PG&E substation improvements are also included in the tables.

In its *Guidance for Assessing and Mitigating Air Quality Impacts* (2015b), SJVAPCD also recommends that lead agencies and project applicants conduct a site-specific ambient air quality analysis if maximum daily emissions of any criteria air pollutants or precursors would exceed a screening criterion of 100 lb/day (SJVAPCD 2015b). The purpose of a site-specific ambient air quality analysis is to determine whether a project would result in, or contribute to, a localized exceedance of NAAQS or CAAQS at receptors located near the emissions-generating activity. Table 3.3-5 summarizes the maximum daily emissions for all criteria pollutants and precursors associated with project construction.

The solar project and the PG&E substation improvements would require construction contractors to use Tier 4 Final engines greater than 25 horsepower for off-road equipment to reduce construction-related exhaust emissions. The project would also be required to adhere to SJVAPCD Regulation VIII measures to reduce construction-related fugitive dust emissions. Construction-related emissions reflecting these project features and requirements are shown in Tables 3.3-4 and 3.3-5.

As indicated in Table 3.3-4, construction of the project would not generate emissions in excess of SJVAPCD's adopted annual thresholds. However, emissions of NO_x would exceed 2 tons per year, which means that the project is subject to SJVAPCD Rule 9510. Although total PM₁₀ emissions would exceed 2 tons per year, the amount of PM₁₀ from exhaust would be less than 2 tons per year. The use of Tier 4 Final equipment would result in a reduction greater than the 20 percent relative to the statewide average for NO_x as required by Rule 9510. Although PM₁₀ exhaust emissions are less than 2 tons per year, PM₁₀ exhaust emissions would also be reduced more than the required amount (45 percent) relative the statewide average equipment.

As shown in Table 3.3-5, emissions would exceed SJVAPCD's AAQA screening-level threshold for CO. Pursuant to SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015b), a dispersion analysis was performed to evaluate if CO concentrations would exceed the CAAQS or NAAQS.

Modeled CO concentrations are summarized in Table 3.3-6. The increase in CO pollutant concentration associated with project construction is added to the background concentration from the nearest air quality station that monitors CO, which is the Modesto air quality monitoring station at 814 14th Street, to estimate the total pollutant concentration for comparison with the applicable ambient air quality standards.

As shown in Table 3.3-6, total maximum CO concentrations due to project construction would be less than both CAAQS and NAAQS CO standards. Therefore, the project would not result in, or contribute to, a localized exceedance of NAAQS or CAAQS. In addition, as discussed in the regulatory setting, all earth-disturbing activities during project construction would be required to implement the fugitive dust-control measures required by SJVAPCD Regulation VIII (e.g., watering areas of disturbed soil, limiting the speed of vehicles traveling on unpaved surfaces), which would minimize the project's contribution to localized concentrations of PM₁₀ and PM_{2.5}.

As described in section 3.3.1, the SJVAB is designated as being in nonattainment with respect to NAAQS and CAAQS for both ozone and PM_{2.5} as well as the CAAQS for PM₁₀. Certain individuals residing in areas that do not meet the ambient air quality standards, including Merced County, could be exposed to pollutant concentrations that cause or aggravate acute and/or chronic health conditions (e.g., asthmas, lost work days, premature mortality). As previously discussed, the magnitude and locations of any potential changes in ambient air quality, and thus health consequences, from these additional emissions cannot be quantified with a high level of certainty due to the dynamic and complex nature of pollutant formation and distribution (e.g., meteorology, emissions sources, sunlight exposure). However, it is known that public health will continue to be affected in Merced County so long as the region does not attain the CAAQS or NAAQS. However, since construction-related criteria pollutant emissions associated with the project would not exceed SJVAPCD significance thresholds or NAAQS or CAAQS standards, construction emissions would not be expected to contribute a significant level of air pollution such that regional air quality within the SJVAB would be degraded.

In summary, with the use of Tier 4 Final engines greater than 25 horsepower as will be required, construction-generated emissions of criteria air pollutants and precursors would not exceed the applicable annual mass emission thresholds recommended by SJVAPCD (as shown in Table 3.3-4) and, therefore, would not result in, or contribute to, an exceedance of the NAAQS or CAAQS in the SJVAB. In addition, construction activity would not generate more than 100 lb/day of any criteria air pollutant or precursor except CO (as shown in Table 3.3-5). An AAQA was conducted for CO, showing that there would be no localized exceedance of CAAQS and NAAQS standards for CO. Also, the project would implement fugitive dust-control measures pursuant to SJVAPCD Regulation VIII,

as required by Community Plan Mitigation Measures 5.12-1b and 5.12-1c. Community Plan Mitigation Measures 5.12-1a would not be required for the solar project because solar facilities are not subject to SJVAPCD's Indirect Source Review (ISR) rule. For these reasons, impacts from solar project construction would be less than significant with implementation of Community Plan EIR mitigation and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

As part of long-term solar project operations, mobile-source emissions of criteria air pollutants and precursors would result from vehicle trips to and from the solar project site by employees and delivery and maintenance vehicles, including trucks that deliver water for periodic washing of the PV panels.

Other sources of operational emissions would include the use of maintenance equipment for washing panels and landscape maintenance equipment, such as mowers. The use of various consumer products, such as cleaning chemicals, would also generate emissions of ROG. However, emissions levels from these sources would be nominal, given the low number of new buildings (i.e., the control room) that would be part of the project. An on-site, 50-kilowatt propane-fueled emergency generator would require periodic testing and maintenance, which would generate criteria air-pollutant emissions.

Table 3.3-7 summarizes the annual level of mobile-source emissions of criteria air pollutants and precursors associated with the solar project's first year of operation (2025).

As shown in Table 3.3-7, annual emissions of criteria air pollutants and precursors associated with operation of the solar project would not exceed annual mass-emission thresholds recommended by SJVAPCD. Therefore, at the regional level, operational emissions of criteria air pollutants and precursors would not result in, or contribute to, an exceedance of NAAQS or CAAQS in the SJVAB.

SJVAPCD recommends that lead agencies and project applicants conduct a site-specific AAQA if a project's maximum daily emissions of any criteria air pollutant or precursors would exceed a screening criterion of 100 lb/day (SJVAPCD 2015c). Table 3.3-8 summarizes the maximum daily emissions of criteria air pollutants and precursors associated with operation of the solar project.

As shown in Table 3.3-8, the maximum daily emissions of all criteria pollutants and precursors associated with solar project operations would be less than SJVAPCD's recommended screening criterion of 100 lb/day. Therefore, a site-specific AAQA for operational emissions is not needed, and the project's operational emissions of criteria pollutants and precursors would not result in, or contribute, to a localized exceedance of NAAQS or CAAQS.

As described in section 3.3.1, the SJVAB is designated as being in nonattainment with respect to NAAQS and CAAQS for both ozone and PM_{2.5} as well as the CAAQS for PM₁₀. Certain individuals residing in areas that do not meet the ambient air quality standards, including Merced County, could be exposed to pollutant concentrations that cause or aggravate acute and/or chronic health conditions (e.g., asthmas, lost work days, premature mortality). As previously discussed, the magnitude and locations of any potential changes in ambient air quality, and thus health consequences, from these additional emissions cannot be quantified with a high level of certainty due to the dynamic and complex nature of pollutant formation and distribution (e.g., meteorology, emissions sources, sunlight exposure). However, it is known that public health will continue to be affected in Merced County so

long as the region does not attain the CAAQS or NAAQS. However, since operations-related criteria pollutant emissions associated with the project would not exceed SJVAPCD significance thresholds or NAAQS or CAAQS standards, operational emissions would not be expected to contribute a significant level of air pollution such that regional air quality within the SJVAB would be degraded.

In summary, the solar project's operational emissions of criteria air pollutants and precursors would not exceed any annual mass emission thresholds recommended by SJVAPCD (as shown in Table 3.3-7) and, therefore, would not result in, or contribute to, an exceedance of NAAQS or CAAQS in the SJVAB. In addition, because solar project operations would not generate more than 100 lb/day of any criteria air pollutant or precursor on any day (as shown in Table 3.3-8), operational emissions would not result in, or contribute, to a localized exceedance of the NAAQS or CAAQS. Community Plan Mitigation Measures 5.12-2a, 5.12-2b, and 5.12-2c would not be required for the solar project because they only apply to tentative maps under the Community Plan. For these reasons, impacts from operation of the solar project would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning Activities

At the end of the operational life of the solar project (approximately 35 years), the solar project operator would decommission and remove the system and its components and return the site to pre-construction conditions. The solar project site could then be converted to other uses in accordance with applicable land-use regulations in effect at that time. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities and would be conducted in accordance with all applicable federal, state, and County regulations. A collection and recycling program would be executed to dispose of the solar project materials.

The solar project's decommissioning activities were evaluated qualitatively because the extent of the activities and equipment amounts for decommissioning is unknown at this time. It is anticipated that decommissioning activities would be less intensive than that of project construction, the emissions of which are analyzed above. The decommissioning and site reclamation process is expected to take 12 months, which is less than the 14-month construction schedule for the project, and may be completed in multiple phases, which would reduce maximum daily emissions by spreading decommissioning activities over the entire 12-month timespan. Furthermore, the types of off-road equipment and vehicles used in the future are anticipated to be much more emission-efficient than the existing fleet due to increasingly more stringent emission-control regulations. For many future equipment and vehicle types, criteria-pollutant emissions are anticipated to be zero due to electrification of equipment and vehicles and other technological advances. Because emissions generated from decommissioning activities are expected to be less than solar project construction emissions, it is expected that emissions of criteria air pollutants and precursors associated with decommissioning of the solar project would not exceed SJVAPCD-established annual mass-emission thresholds or daily emissions-screening criteria.

As described in section 3.3.1, the SJVAB is designated as being in nonattainment with respect to NAAQS and CAAQS for both ozone and PM_{2.5} as well as the CAAQS for PM₁₀. Certain individuals residing in areas that do not meet the ambient air quality standards, including Merced County, could be exposed to pollutant concentrations that cause or aggravate acute and/or chronic health conditions (e.g., asthmas, lost work days, premature mortality). As previously discussed, the magnitude and

locations of any potential changes in ambient air quality, and thus health consequences, from these additional emissions cannot be quantified with a high level of certainty due to the dynamic and complex nature of pollutant formation and distribution (e.g., meteorology, emissions sources, sunlight exposure). However, it is known that public health will continue to be affected in Merced County so long as the region does not attain the CAAQS or NAAQS. However, since decommissioning-related criteria pollutant emissions associated with the project would not exceed SJVAPCD significance thresholds or NAAQS or CAAQS standards, decommissioning emissions would not be expected to contribute a significant level of air pollution such that regional air quality within the SJVAB would be degraded. Therefore, emissions of criteria air pollutants and precursors generated during decommissioning of the solar project would not result in, or contribute to, an exceedance of NAAQS or CAAQS in the SJVAB, or result in localized concentrations of criteria air pollutants that exceed NAAQS or CAAQS. Impacts from decommissioning of the solar project would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Emissions associated with the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

The project would establish an off-site mitigation site for the San Joaquin kit fox. An area of approximately 1,498 acres of grassland habitat would be placed into a conservation easement in perpetuity. The land would be managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. It would continue to be grazed or mowed and remain permeable for kit fox movement. Rodenticide usage would be prohibited. Roadways and fencing around the perimeter would be maintained. Targeted invasive plant management activities would be necessary to prevent invasion by pest plant species. The proposed permit term is 40 years and encompasses all construction and testing activities, as well as the full operational life of the solar project and its decommissioning.

Mowing and monitoring of the off-site mitigation site may require the operation of criteria pollutant-generating equipment and vehicles. However, these activities would be much less intensive (i.e., fewer equipment operating hours and less construction activity) than the solar project. Accordingly, the annual and maximum daily emissions associated with the off-site mitigation would be much lower than those resulting from construction and operation of the proposed solar facilities. Thus, with respect to criteria pollutant emissions from implementation of the off-site mitigation site, impacts would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The proposed project includes transmission system improvements to PG&E's Los Banos substation to connect the PG&E substation to the solar project and facilitate the delivery of power from the solar project.

Construction and operational activities associated with the PG&E substation improvements would be less intensive (i.e., fewer equipment operating hours and less construction activity) than the solar project. As shown in Tables 3.3-4, 3.3-5, and 3.3-6, above, annual and maximum daily criteria pollutant emissions associated with construction of the proposed project, including the solar project and the PG&E substation improvements, would not exceed the applicable SJVAPCD thresholds or exceed the applicable NAAQS and CAAQS standards. Therefore, construction impacts associated with the PG&E substation improvements would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation of the proposed PG&E substation improvements would not increase operational trips to and from the PG&E substation beyond existing conditions, nor would they introduce new emission sources. Therefore, operational impacts associated with the PG&E substation improvements would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

For construction, adding together the criteria pollutant emissions generated by the solar project, PG&E improvements, and off-site mitigation site to the off-site residential redesignation would not result in a substantially increased significant impact compared to that analyzed in the Community Plan EIR. Construction emissions from the off-site mitigation site would be very minimal compared to either the solar project or the PG&E substation improvements. In addition, because there is no proposed development at the off-site redesignation site area, those previously identified impacts would not combine with the construction-related emissions from either the solar project, PG&E substation improvements, or off-site mitigation site.

For operations, as shown in Table 3.3-7, whole project criteria pollutant emissions are minimal and would not result in a substantially increased significant impact even if entirely added to the Community Plan EIR emissions. In addition, Community Plan EIR criteria pollutant emissions estimates can be considered conservative due to implementation of improved emissions standards and improvements in vehicle technology since certification of the Community Plan EIR.

Impacts from future development within the off-site residential redesignation area would continue to be significant and unavoidable but would not exceed the significant and unavoidable impacts identified in the Community Plan EIR.

Based on this analysis, impacts from the whole project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, would be significant and unavoidable but would not exceed the significant and unavoidable impact identified in the Community Plan EIR. ***With implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations? (*With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.*)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts to sensitive receptors that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.12-3 and 5.12-4 on pages 5.12-28—5.12-37 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that operational local mobile-source emissions of CO would meet SJVAPCD screening criteria for CO, but would not result in significant impacts. The Community Plan EIR also found that operational TAC emissions from Billy Wright Landfill and existing off-site on-road mobile sources could result in the exposure of sensitive receptors to TAC emissions that would exceed SJVAPCD’s significance thresholds. Community Plan Mitigation Measures 5.12-4a, 5.12-4b, and 5.12-4c were prescribed to mitigate this impact. Emissions of fungal spores that could lead to Valley Fever, while not specifically analyzed in the Community Plan EIR, were known at the time of certification of the Community Plan EIR (Lauer, et al. 2020). The Community Plan EIR did evaluate grading and ground disturbance activities as a result of construction activities associated with buildout of the Community Plan, which can lead to emissions of fungal spores that cause Valley Fever. Ultimately, the Community Plan EIR concluded that impacts to sensitive receptors would be significant and unavoidable after implementation of mitigation.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from single-family residential use to high-density/medium-density residential use.

In California Building Industry Association v. Bay Area Air Quality Management District, 62 Cal.4th 369 (2015), the California Supreme Court held that “agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project’s future users or residents. But when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project’s impact on the environment -- and not the environment’s impact on the project – that compels an evaluation of how future residents or users could be affected by exacerbated conditions.” The impact from operational TAC emissions emitted from the Billy Wright Landfill on future residents in the off-site

residential redesignation area is an impact of the environment on the project. The proposed project would not exacerbate existing TAC emissions from the landfill. Therefore, no further evaluation of this issue is required under CEQA.

With regard to project-related TACs, the proposed off-site residential redesignation would not result in the direct generation of criteria pollutant emissions and precursors, or TACs. While the proposed off-site residential redesignation would increase the planned density within the residential redesignation area, it would not change the overall medium-density/high-density residential capacity of the approved Community Plan. Instead, it would redistribute already approved medium-density/high-density residential capacity to a different area within the Community Plan area. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. The significant and unavoidable impact on sensitive receptors was disclosed in the Community Plan EIR as part of approval of the Community Plan. The proposed off-site residential redesignation would not increase the amount of development associated with buildout of the Community Plan. Therefore, ***with implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Toxic Air Contaminants – Construction, Operation, and Decommissioning

As discussed in Section 3.3.1, *Existing Conditions*, DPM is classified as a carcinogenic TAC by CARB and is the primary pollutant of concern with regard to health risks to sensitive receptors during proposed project construction and operations. The operation of diesel-powered construction equipment and heavy-duty trucks could potentially expose nearby sensitive receptors to concentrations and elevated levels of health risk. Health risks from exposure to DPM are assessed quantitatively based on anticipated project emissions and the proximity of sensitive receptors to the project site, including numerous residential dwellings, as discussed in Section 3.3.1, *Existing Conditions*.

Table 3.3-9 shows the cancer risk and noncancer hazard index at the maximum affected residence based on an HRA conducted to evaluate construction and operations-related emissions of DPM. As previously discussed, the solar project and the PG&E substation improvements would require construction contractors to use Tier 4 Final engines greater than 25 horsepower for off-road equipment to reduce construction-related exhaust emissions. Implementation of this project design feature is reflected in the construction-related DPM emissions estimates. Detailed dispersion modeling and health-risk calculations are provided in Attachment B to the AQR.

Table 3.3-9. Estimated Health Risk during Construction and Operations

Location	Cancer Risk (cases per million)	Chronic Hazard Index
Maximum Incremental Risk at Existing Receptors	0.6	0.0005
SJVAPCD Significance Thresholds	20.0	1.00

Source: Attachment B to the AQR.

SJVAPCD = San Joaquin Valley Air Pollution Control District.

As shown in Table 3.3-9, implementation of the proposed project would not result in increased cancer risk or hazard index in excess of SJVAPCD-established significance thresholds. TAC emissions generated from decommissioning activities are expected to be less than solar project construction emissions and it is expected that emissions of TAC associated with decommissioning of the solar project would not cause an exceedance of SJVAPCD-established health risk thresholds. Community Plan Mitigation Measures 5.12-4a, 5.12-4b, and 5.12-4c would not apply to the solar project because they only apply to Implementation Plans under the Community Plan and tract maps that include sensitive land uses (e.g., residences and schools). Impacts from solar project construction, operation, and decommissioning would be less than significant and would not exceed the significant and unavoidable impact identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Carbon Monoxide Hotspots – Operation

Elevated CO concentrations are typically found in areas with significant traffic congestion. SJVAPCD requires an analysis of localized CO concentrations associated with traffic congestion to ensure concentrations remain below CAAQS and NAAQS. The air district has developed a set of preliminary screening criteria that can be used to determine whether a project would cause or contribute to an existing or future violation of the ambient air quality standards.

As discussed in Table 8 of the Transportation Impact Analysis (Appendix 3.17-1) for the project, traffic from the solar project would not cause LOS to substantially degrade at any roadways or intersections in the project area during construction or operation. Therefore, the proposed project would not conflict with the SJVAPCD's screening criteria and would not cause or contribute to an existing or future violation of the NAAQS or CAAQS. Impacts from solar project operation would be less than significant and would not exceed the significant and unavoidable impact identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Valley Fever – Construction

Construction activities that include ground disturbance can result in fugitive dust, which can cause spores of the *Coccidioides immitis* fungus to become airborne if they are present in the soil. Such activities include digging, operating earthmoving equipment, driving vehicles over dirt surfaces, or working in dusty, wind-blown areas. If inhaled by on-site construction workers or off-site receptors, these spores can cause Valley Fever, as described in Section 3.3.1, *Existing Conditions*.

Given the endemic nature of the disease and the existing number of earthmoving activities in the county related to agricultural activities, grading and excavation for new land-use development, and surface-mining operations, it is not possible to attribute a specific case of Valley Fever to a specific earthmoving activity. Ground-disturbance activities represent a continual source of spores that contribute to Valley Fever cases reported each year. Construction activities associated with the project would result in similar localized ground disturbance activities to those that occur continually in the county.

OSHA regulates workplace safety to protect workers, including by requiring respiratory protection (29 Code of Federal Regulations Section 1910.134). California, under an agreement with OSHA, operates an occupational safety and health program in accordance with Section 18 of the Occupational Safety and Health Act of 1970. The Department of Industrial Relations administers the California Occupational

Safety and Health Program, commonly referred to as Cal/OSHA. Under state law, employers must “establish, implement and maintain an effective injury illness and protection plan” that includes “a system for ensuring that employees comply with safe and healthy work practices,” “a system for communicating with employees in a form readily understandable by all affected employees on matters relating to occupational safety and health,” “procedures for identifying and evaluating work place hazards,” “a procedure to investigate occupational injury or occupational illness,” “methods and/ or procedures for correcting unsafe or unhealthy conditions, work practices and work procedures,” and “training and instruction” (8 CCR § 3203). Because Valley Fever infection occurs when a spore is inhaled, workers who disturb soil where fungal spores are found are most likely to breathe in spores and become infected. Accordingly, requirements for respiratory protection (29 Code of Federal Regulations § 1910.134) would be particularly applicable. California’s Department of Industrial Relations enforces these laws on construction sites. Because ground disturbance in the County is ongoing, the number of cases of Valley Fever reported in the County is low each year, and independently enforceable protections of worker safety and health are in place, the risk is low that fugitive dust caused by the solar project would cause substantial adverse effects on human beings. However, because the potential consequences of contracting Valley Fever are high (potentially including death), this analysis conservatively concludes that project-generated fugitive dust could expose on-site workers and off-site receptors to spores of the *Coccidioides immitis* fungus. The following project-specific mitigation would be required.

Mitigation Measure AQ-3: Implement Additional Dust Control Measures to Reduce Exposure to the *Coccidioides Immitis* Fungus During Solar Project Construction.

In addition to implementing the dust control measured required by SJVAPCD Regulation VIII, including the dust control measures listed in Table 3.3-3 of this report, the solar project applicant shall require its construction contractors, as a condition of contract, to implement supplemental measures to reduce exposure of on-site workers and off-site receptors to fugitive dust emissions that contain spores of the *Coccidioides immitis* fungus that can cause Valley Fever, including, but not limited to, the following requirements, which shall be verified by the Merced County Department of Public Works prior to issuance of a construction permit, as applicable and noted below:

- If wind speeds exceed 15 miles per hour or temperatures exceed 95°F for 3 consecutive days, additional dust suppression measures (such as additional water or the application of additional soil stabilizer) shall be implemented prior to and immediately following ground-disturbing activities. The additional dust suppression shall continue until winds are 10 miles per hour or lower and outdoor air temperatures are below 90°F for at least 2 consecutive days. The additional dust-suppression measures shall be incorporated into the Final Construction Management Plan, which shall be submitted to the County for review and approval prior to the issuance of any grading permit.
- Prior to any project grading activity, the primary construction contractor shall prepare and implement a worker training program that describes potential health hazards associated with Valley Fever, common symptoms, proper safety procedures to minimize health hazards, and notification procedures if suspected work-related symptoms are identified during construction. The objective of the training shall be to ensure that workers are aware of the dangers associated with Valley Fever and incentivize them to implement the required dust-control measures effectively to reduce the potential for their own exposure to the fungus. The worker training program shall be included in the standard, in-person training for construction workers and shall identify safety measures to be implemented by

construction contractors during construction, including all safety measures listed here. Prior to initiating any grading, the project applicant shall provide the County with copies of all educational training material for review and approval. No later than 30 days after any new employee(s) begin work, the project applicant shall submit evidence to the County that each employee has acknowledged receipt of the training (e.g., sign-in sheets with a statement verifying receipt and understanding of the training).

- Construction tools, equipment, and vehicles shall be thoroughly cleaned with water before they are moved off-site to other work locations.
- Wheel-washing facilities with water-recycling systems shall be provided at all site-egress points. Vehicles leaving the site on a daily basis and which are used in areas where there is not gravel surface treatment shall utilize wheel-washing facilities in order to reduce dust migration off the project site.
- The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.
- Wherever possible, grading, and trenching work shall be phased so that earthmoving equipment is working well ahead or downwind of workers on the ground.

Significance with Mitigation

Implementation of Mitigation Measure AQ-3 would minimize the potential for on-site workers and off-site receptors to become exposed to fugitive dust containing spores of the *Coccidioides immitis* fungus, thereby reducing this impact to a less-than-significant level with mitigation, which is less than the significant and unavoidable impact identified in the Community Plan EIR. Consequently, ***with implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Emissions associated with the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

Mowing and monitoring of the off-site mitigation site may require the operation of equipment and vehicles that could generate toxic air containment emissions. However, these activities would be much less intensive (i.e., fewer equipment operating hours and less construction activity) than the solar project. Accordingly, the toxic air contaminant emissions and corresponding impacts on nearby sensitive receptors associated with establishment of the off-site mitigation site would be lower than those resulting from the proposed solar facilities. Moreover, as discussed above, solar project activities would result in a less than significant impact with respect to toxic air containment emissions and corresponding impacts on nearby sensitive receptors. Finally, the off-site mitigation site would not include the development of any new structures or generate additional toxic air containment emissions from mobile or stationary sources. As activities related to the proposed off-site mitigation site would be less emissions-intensive than the construction of the solar facilities, and the off-site mitigation site would not involve the development of any additional emissions-generating land uses, the off-site mitigation site would not expose sensitive receptors to substantial

pollutant concentrations. Impacts from the off-site mitigation site would be less than significant and would not exceed the significant and unavoidable impact identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The proposed project includes transmission system improvements to PG&E's Los Banos substation to connect the PG&E substation to the solar project and facilitate the delivery of power from the solar project.

Construction and operational activities associated with the PG&E substation improvements would be less intensive (i.e., fewer equipment operating hours and less construction activity) than the solar project. Accordingly, as shown in Table 3.3-9, above, toxic air contaminant emissions and corresponding impacts on nearby sensitive receptors associated with the PG&E substation improvements would not exceed the applicable SJVAPCD thresholds. Operation of the proposed PG&E substation improvements would result in minimal toxic air contaminant emissions. Moreover, PG&E substation activities would implement the following standard construction PG&E Avoidance and Minimization Measures/Best Management Practices (AMM/BMPs):²

- **PG&E AMM/BMP-1: Fugitive Dust Control.** The PG&E crew will not allow visible dust to pass beyond the PG&E property boundary. The crew will abate dust by:
 - Applying water to disturbed areas and to storage stockpiles;
 - Applying water in sufficient quantities to prevent dust plumes during activities such as clearing & grubbing, backfilling, trenching and other earth moving activities;
 - Limiting vehicle speed to 15 miles per hour;
 - Loading haul trucks with a freeboard (space between top of truck and load) of six inches or greater;
 - Covering the top of the haul truck load;
 - Cleaning up track-out at least daily; and
 - Not generating dust in amounts that create a nuisance to wildlife or people, particularly where sensitive receptors are located nearby or down-wind. During inactive periods (e.g., after normal working hours, weekends, and holidays), the PG&E crew will apply water or other approved material to form a visible crust on the soil and restrict vehicle access.
- **PG&E AMM/BMP-2: Portable Equipment Registration Program.** Portable engines will be registered into the Statewide Portable Equipment Registration Program (PERP) administered by CARB, if:
 - the engine is portable (mounted on a truck, trailer, skids, or wheels);
 - the engine is 50 brake horsepower or greater, and;
 - the engine does not provide motive force for a vehicle.

² Please refer to Section 2.3.3, *PG&E Avoidance and Minimization Measures/Best Management Practices*, for a complete list of construction AMM/BMPs that would be implemented during construction of the PG&E substation improvements.

- Auxiliary engines mounted on vehicles will be registered if they are 50 brake horsepower or greater. For PG&E-owned units, PG&E Environmental Operations and Transportation Services is responsible for maintaining valid PERP registration. For rental units, the rental vendor is responsible for the PERP registration. If a current registration sticker and registration paperwork is not on the unit, the crew will not use the piece of equipment and have it replaced with a unit is compliant.
- Additional requirements include:
 - If the PERP unit is being used to provide primary or supplemental power to a building during an electrical upgrade there is a 90-day limit on the use of PERP.
 - If the PERP unit is being used to provide primary or supplemental power to a building and an electrical upgrade is not happening a local air district permit is required.
 - If the PERP generator is being used for Public Safety Power Shutoffs (PSPS) support, a local air district permit will be required.
 - If the PERP Unit is being used to replace a failed stationary source generator:
 - a local district notification is required within 72 hours;
 - a Tier 4 Final Engine should be used;
 - and a local district permit may be required in 180 days.

Implementation of PG&E AMM/BMP-1, Fugitive Dust Control, and PG&E AMM/BMP-2, Portable Equipment Registration Program, would reduce emission of fugitive dust and TACs, respectively, as well as corresponding health impacts on nearby sensitive receptors. Thus, as with Mitigation Measure AQ-3, this AMM would minimize the potential for on-site workers and off-site receptors to become exposed to fugitive dust containing spores of the *Coccidioides immitis* fungus. Thus, the proposed PG&E substation improvements would not expose sensitive receptors to substantial pollutant concentrations. Impacts from the PG&E substation improvements would be less than significant and would not exceed the significant and unavoidable impact identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

For construction, adding together the TAC emissions generated by the solar project, PG&E improvements, and off-site mitigation site to the off-site residential redesignation would not result in a substantially increased significant impact compared to that analyzed in the Community Plan EIR. Construction emissions from the off-site mitigation site would be very minimal compared to either the solar project or the PG&E substation improvements. In addition, because there is no proposed development at the off-site redesignation site area, those previously identified impacts would not combine with the construction-related emissions from either the solar project, PG&E substation improvements, or off-site mitigation site.

For operations, whole project TAC emissions are minimal and would not result in a substantially increased significant impact even if entirely added to the Community Plan EIR emissions. In addition, Community Plan EIR TAC emissions estimates can be considered conservative due to implementation of improved emissions standards and improvements in vehicle technology since certification of the Community Plan EIR.

Impacts from future development within the off-site residential redesignation area would continue to be significant and unavoidable but would not exceed the significant and unavoidable impact identified in the Community Plan EIR.

Based on the analysis above, implementation of Mitigation Measure AQ-3 would reduce solar project impacts to a less-than-significant level. Therefore, impacts from the whole project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, would be significant and unavoidable but would not exceed the significant and unavoidable impact identified in the Community Plan EIR. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts beyond those identified in the previous would result.***

Impact AQ-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? (With implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts from odors that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.12-5 on pages 5.12-37—5.12-41 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that odors from Billy Wright Landfill and the potential wastewater treatment facility included in the Community Plan could result in the frequent exposure of on-site receptors to substantial objectionable odor emissions. Community Plan Mitigation Measure 5.12-5 was prescribed to mitigate the impact. Ultimately, the Community Plan EIR concluded that impacts to on-site receptors would be significant and unavoidable after implementation of mitigation.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from single-family residential use to high-density/medium-density residential use.

In *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369 (2015), the California Supreme Court held that “agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project’s future users or residents. But when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project’s impact on the environment -- and not the environment’s impact on the project – that compels an evaluation of how future residents or

users could be affected by exacerbated conditions.” The impact from odors emitted from the Billy Wright Landfill and potential future wastewater treatment facility on future residents in the off-site residential redesignation area is an impact of the environment on the project. The proposed project would not exacerbate existing odors from the landfill or potential future odors from the wastewater treatment facility. Therefore, no further evaluation of this issue is required under CEQA.

With regard to project-generated odors, the proposed off-site residential redesignation would not result in the direct generation of odors. While the proposed off-site residential redesignation would increase the planned density within the residential redesignation area, it would not change the overall medium-density/high-density residential capacity of the approved Community Plan. Instead, it would redistribute already approved medium-density/high-density residential capacity to a different area within the Community Plan area. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measure in the Community Plan EIR. The significant and unavoidable impact on on-site receptors was disclosed in the Community Plan EIR as part of approval of the Community Plan (and was based on impacts of the environment on the project, which is no longer considered an impact under CEQA). The proposed off-site residential redesignation would not increase the amount of development associated with buildout of the Community Plan, and therefore would not increase project-generated odors beyond those considered in the Community Plan EIR. Therefore, ***with implementation of Community Plan mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction, Operation, and Decommissioning

During construction of the solar project, exhaust from construction equipment may produce discernible odors typical of most construction sites that some people may find objectionable if exposed for an extended period. Such odors could be a temporary nuisance to off-site areas close to where on-site construction activity would take place. However, these odors would dissipate with distance, and emissions-generating construction activity would not take place in any single portion of the project site for an extended period. Also, the density of land-use development areas around the project site is relatively low. Furthermore, the amount of diesel exhaust-emitting activity during operation of the project (i.e., equipment used for cleaning solar panels) would be minor and even more intermittent than odor-generating construction activity. Moreover, the solar project would not be one of the odor-generating project types for which SJVAPCD recommends specific set-back distances (i.e., wastewater-treatment facility, landfill, solid waste-transfer station, composting facility, refinery, chemical manufacturing, painting/coating operations, food-processing facility, feed lot, or rendering plant; CARB 2005). For these reasons, objectionable odors generated by construction and operation the solar project would not adversely affect a substantial number of people. Odors generated from decommissioning activities are expected to be less than solar project construction odors and it is expected that odors associated with decommissioning of the solar project would not generate odors adversely affecting a substantial number of people. Community Plan Mitigation Measure 5.12-5 would not apply to the solar project because it would only apply to odor-sensitive land uses near Billy Wright landfill and the Community Plan wastewater treatment plant. Impacts from solar project construction, operation, and decommissioning would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Emissions associated with the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

During mowing of the off-site mitigation site, exhaust from equipment may produce discernible odors typical of most construction sites that some people may find objectionable if exposed for an extended period. Such odors could be a temporary nuisance to off-site areas close to where on-site construction activity would take place. However, consistent with the discussion of odors resulting from solar project activities, odors would dissipate with distance; emissions-generating activity would not take place in any single portion of the site for an extended period; and the density of land-use development areas around the site is relatively low. In addition, the off-site mitigation site would not include one of the odor-generating project types for which SJVAPCD recommends specific set-back distances. For these reasons, objectionable odors generated by the off-site mitigation site would not adversely affect a substantial number of people. Impacts from the off-site mitigation site would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

During construction of the proposed PG&E substation improvements, exhaust from construction equipment may produce discernible odors typical of most construction sites that some people may find objectionable if exposed for an extended period. Such odors could be a temporary nuisance to off-site areas close to where on-site construction activity would take place. However, consistent with the discussion of odors resulting from solar project activities, odors would dissipate with distance; emissions-generating construction activity would not take place in any single portion of the project site for an extended period; and the density of land-use development areas around the project site is relatively low. In addition, the proposed PG&E Substation Improvements do not include any of the odor-generating project types for which SJVAPCD recommends specific set-back distances. For these reasons, objectionable odors generated by the proposed PG&E Substation Improvements would not adversely affect a substantial number of people. Impacts from the PG&E substation improvements would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

For construction, adding together the odor emissions generated by the solar project, PG&E improvements, and off-site mitigation site to the off-site residential redesignation would not result in a substantially increased significant impact compared to that analyzed in the Community Plan EIR. Construction odor emissions from the off-site mitigation site would be very minimal compared to either the solar project or the PG&E substation improvements. In addition, because there is no proposed development at the off-site redesignation site area, those previously identified impacts would not combine with the construction-related odor emissions from either the solar project, PG&E substation improvements, or off-site mitigation site.

For operations, whole project odor emissions are minimal and would not result in a substantially increased significant impact even if entirely added to the Community Plan EIR odor emissions.

Impacts from future development within the off-site residential redesignation area would continue to be significant and unavoidable but would not exceed the significant and unavoidable impact identified in the Community Plan EIR.

Based on this analysis, impacts from the whole project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, would be significant and unavoidable but would not exceed the significant and unavoidable impact identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

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3.4 Biological Resources

This section identifies and evaluates the project's potential impacts on biological resources, including those on special-status plant and wildlife species, sensitive habitat, and aquatic resources. It also describes existing conditions at the project site and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site residential redesignation are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Relevant technical documentation used in this analysis includes:

- Biological Resources Evaluation for the Las Camas Solar Development Project (Appendix 3.4-1)
- Aquatic Resources Delineation Report for the Las Camas Solar Development Project (Appendix 3.4-2)
- Aquatic Resources Delineation Report Addendum for the Las Camas Solar Development Project (Appendix 3.4-3)
- 2023 California Tiger Salamander Habitat Assessment, Las Camas Solar (Appendix 3.4-4)
- *Methods and Results of 2022 Raptor Surveys for the Las Camas Solar Park Project Site and Mitigation Site, Merced County* (Appendix 3.4-5)

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. These include anticipated impacts on and needed mitigation for San Joaquin kit fox and Swainson's hawk as well as potential impacts on blunt-nosed lizard, giant kangaroo rat, California tiger salamander, San Joaquin antelope squirrel, mountain lion, western burrowing owl, tule elk, and crotch bumble bee. The issues also include potential impacts on biological resources from vibratory work (i.e., underground work) during construction.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.4.1 Existing Conditions

Environmental Setting

Regional Setting

The site for the Las Camas Solar Project is approximately 2 miles south of the community of Santa Nella and 5 miles west of the city of Los Banos in western Merced County, California (Figure 2-1). It is also within the San Luis Dam and Volta U.S. Geological Survey (USGS) 7.5-minute quadrangles. The project site, located on the western edge of the San Joaquin Valley, ranges in elevation from 200 to 500 feet above sea level. The area west of the site quickly transitions to rolling hills within the Coast Range. The area is rural in character. An isolated residential subdivision and a small commercial area are located near the junction of State Route (SR) 152 and SR 33, directly northwest of the study area. The community of Santa Nella, is located approximately 2 miles north of the study area and the city of Los Banos is located 5 miles to the east. San Luis Reservoir and O'Neill Forebay are approximately 1.5 miles north of project site.

The region generally reflects a Mediterranean climate, with cool, wet winters and warm, dry summers. The arid conditions of the region are due in part to a rain shadow effect in which moist air coming from the Pacific Ocean rises once it reaches the mountains of the California Coast Range. The water vapor condenses and falls as precipitation, resulting in arid conditions, or a rain shadow, on the leeward side of the mountains.

Solar Project Site

The approximately 1,741-acre solar project site is bordered by SR 33 to the north, Interstate 5 (I-5) to the east, and privately owned farmland and the Billy Wright Landfill to the south and west. Billy Wright Road borders the southeasternmost portion of the solar project site, which has a history of disturbance, predominantly from dry farming and grazing by domestic sheep. The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming nonnative annual grassland with minimal plant diversity. However, portions of the solar project site are currently used for grazing and dry farming. Similar to the solar project site, the surrounding lands to the west and southwest are also grazed nonnative annual grassland. This land cover type has the potential to support several listed and special-status species, including Swainson's hawk (*Buteo swainsoni*), which is listed as threatened under the California Endangered Species Act (CESA). The grasslands also provide suitable habitat for San Joaquin kit fox (*Vulpes macrotis mutica*), which is listed as endangered under the federal Endangered Species Act (ESA) and as threatened under CESA. Aquatic habitat for special-status fairy shrimp (*Branchinecta* sp.), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), and special-status plants is not present within the study area. No occupied aquatic habitat for listed California tiger salamanders was identified at the project site or in the surrounding area. Suitable habitat for blunt-nosed leopard lizard (*Gambelia sila*) is considered marginal to unsuitable. The introduced annual grasslands present at the site are generally too dense to provide suitable foraging areas for this species.

Small stands as well as individual eucalyptus trees are present within the project site; one area has scattered native trees. The small stand of native trees is near the housing development at the north end of the project site. The trees and shrubs are a declining historical remnant of a riparian woodland. They appear to be old, decadent, and senescing individuals. All of the trees at the project site provide nesting habitat for a variety of raptors and small birds.

Aquatic resources within the project site consist of one ephemeral drainage. The drainage is anticipated to be inundated seasonally during years with above-normal rainfall, primarily during or immediately following rainfall events. The bed of the ephemeral stream varied in vegetation density, ranging from sparsely vegetated with patches of bare ground to densely vegetated.

PG&E Substation Improvements Area

The approximately 47-acre PG&E substation site contains an approximately 10-acre area that would be the location for the proposed PG&E substation improvements. The PG&E substation improvements area is dominated by nonnative annual grassland with minimal plant diversity. Most of the 10 acres provides suitable habitat for San Joaquin kit fox. Numerous California ground squirrel burrows occur at the site, providing foraging and denning opportunities for the listed fox.

The PG&E substation improvement area contains an unvegetated stream and a small portion of a vegetated stream. These two features were created in upland areas to store and convey stormwater. The aquatic features join at the southeast corner of the substation, then flow through a culvert in the berm forming the outer bank before discharging overland in the adjacent upland area.

Off-Site Mitigation Site

The off-site mitigation site is situated close to the eastern and southern edges of Los Banos Reservoir. Similar to the solar project site, elevations range from 100 feet above sea level at the lowest point to 500 feet at the highest point. The off-site mitigation site is occupied by grassland with greater habitat value than the solar project site. Approximately 16 percent of the off-site mitigation site has moderate to high habitat suitability, approximately 83 percent of the off-site mitigation site has low to moderate habitat suitability, and less than 1 percent of the off-site mitigation site has no to low habitat suitability. The off-site mitigation site also provides an important piece in a contiguous conservation framework for San Joaquin kit fox, particularly because it connects to one of the few I-5 undercrossing where kit fox can move between the Central Valley flatlands and rolling grassland hills west of I-5. There are also records of nearby Swainson's hawk nests. The site is similarly suitable for Swainson's hawk foraging and use.

Off-Site Residential Redesignation Area

The off-site residential redesignation area abuts the southeast portion of the solar project site. The biological resources setting at the off-site residential redesignation area is described on page 3-1 in Chapter 3 of the Community Plan EIR and incorporated by reference. As described in that discussion, the off-site residential redesignation area is used primarily for active and fallowed agricultural production (e.g., alfalfa, hay, oats, vineyards, orchards) or grazing land for cattle and sheep. This discussion accurately describes the current existing setting at the residential redesignation area.

Regulatory Setting

Federal

This section provides an overview of the major laws and regulations that influence the management of biological resources at the project site.

Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS or Service) has jurisdiction over species that are listed as threatened or endangered under Section 9 of the federal ESA. The ESA protects listed species from harm, or *take*, meaning to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” For any project involving a federal agency in which a listed species could be affected, the federal agency must consult with USFWS in accordance with Section 7 of the ESA. USFWS issues a biological opinion and, if the project would not jeopardize the continued existence of the listed species, issues an incidental take permit. When no federal context is present, proponents of a project affecting a listed species must consult with USFWS and apply for an incidental take permit under ESA Section 10, which requires an applicant to submit a habitat conservation plan (HCP) that specifies project impacts and mitigation measures.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) (16 United States Code 668) prohibits take and disturbance of individuals and nests. Take permits for birds or body parts are limited to religious, scientific, or falconry pursuits. However, the BGEPA was amended in 1978 to allow mining developers to apply to USFWS for permits to remove inactive golden eagle (*Aquila chrysaetos*) nests in the course of “resource development or recovery” operations.

In 2009, USFWS issued a Final Rule regarding new permit regulations that allows take “for the protection of...other interests in any particular locality” where take is “associated with and not the purpose of an otherwise lawful activity...” (74 *Federal Register* [FR] 46836–46879). The 2009 Final Rule authorized programmatic take (i.e., take that is recurring and not in a specific, identifiable timeframe or location) of eagles only if avoidance measures have been implemented to the maximum extent achievable such that take was no longer avoidable.

In 2016, USFWS issued revisions to the Final Rule pertaining to incidental take and take of eagle nests. The Final Rule changed the programmatic take standard to a new standard that authorized “incidental take” if all “practicable” measures to reduce impacts on eagles are implemented. An eagle incidental take permit under the 2016 Revisions to the Final Rule (50 Code of Federal Regulations [CFR] 22) is available for activities that may disturb or otherwise take eagles on an ongoing basis, such as operational activities. The eagle incidental take permit under the 2009 Final Rule was valid for up to 5 years. In 2012, USFWS proposed extending the maximum term for eagle incidental take permits from 5 to 30 years (77 FR 22267–22278). In 2013, USFWS issued a Final Rule to extend the maximum term for eagle incidental take permits to 30 years, subject to a recurring 5-year review process throughout the life of the permit. Although this rule was challenged in 2015, the final regulations under the 2016 revisions to the Final Rule also include a maximum permit term of 30 years, subject to a recurring 5-year review process throughout the life of the permit (81 FR 91494–91554). On September 30, 2022, USFWS published a proposed rule in the Federal Register and draft environmental assessment that would modify its approach to improve eagle incidental take permitting (87 FR 59598).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 United States Code Section 703, et seq.), first enacted in 1918, provides for the protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of such birds. The MBTA of 1918 provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird or any

part, nest, or egg of any such bird. On December 22, 2017, the U.S. Department of the Interior's Office of the Solicitor issued a revised interpretation (Opinion M-37050) of the MBTA's prohibition regarding the take of migratory bird species. Opinion M-37050 concluded that "consistent with the text, history, and purpose of the MBTA, the statute's prohibitions on pursuing, hunting, taking, capturing, killing, or attempting to do the same apply only to affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs." According to Opinion M-37050, take of a migratory bird, its nest, or eggs that is incidental to another lawful activity does not violate the MBTA, and the MBTA's criminal provisions do not apply to those activities. However, on October 4, 2021, USFWS published a rule revoking the Trump-era MBTA interpretation, with the result that USFWS has returned to interpreting the MBTA as prohibiting incidental take and applying enforcement discretion to the incidental take of migratory birds. USFWS has indicated that it intends to establish a regulatory framework for authorizing incidental take of migratory birds, but has not yet done so. The current list of species protected by the MBTA can be found in Title 50 CFR, Section 10.13. The list includes nearly all birds that are native to the United States.

State

California Environmental Quality Act

CEQA is the regulatory framework by which California public agencies identify and mitigate significant environmental impacts. A project normally has a significant environmental impact on biological resources if it would substantially affect a rare or endangered species or the habitat of that species, substantially interfere with the movement of resident or migratory fish or wildlife, or substantially diminish habitat for fish, wildlife, or plants. The CEQA Guidelines define rare, threatened, and endangered species as those listed under the federal ESA or the CESA or any other species that meet the criteria of the resource agencies or local agencies (e.g., species of special concern, as designated by the California Department of Fish and Wildlife [CDFW]). The guidelines state that the lead agency preparing an environmental impact report (EIR) must consult with and receive written findings from CDFW concerning project impacts on species that have been listed as endangered or threatened. The effects of a proposed project on these resources are important in determining whether the project would have significant environmental impacts under CEQA.

CDFW maintains lists of plants of special concern in California, in addition to those listed as threatened or endangered (CDFW 2022b). These species have no formal protection under CESA; however, plants with a California Rare Plant Rank (CRPR) of 1A, 1B, or 2 meet the definition of *endangered* or *rare* in Section 1901 of the California Fish and Game Code and may qualify for listing by the State of California (State). Pursuant to Section 15380(d) of CEQA, such plant species are considered to be endangered, rare, or threatened for this analysis.

California Endangered Species Act

CESA prohibits the take of endangered and threatened species; however, unlike the federal ESA, habitat destruction is not included in the State's definition of *take*. Section 2090 of CESA requires State agencies to comply with endangered species protection and recovery and promote their conservation. CDFW administers CESA and authorizes take through agreements under California Fish and Game Code Section 2081.

California Fish and Game Code

Fully Protected Species

The California Fish and Game Code provides protection from take for a variety of species, referred to as *fully protected species*. Section 5050 lists fully protected amphibians and reptiles, Section 3515 lists fully protected fish, Section 3511 lists fully protected birds, and Section 4700 lists fully protected mammals. The California Fish and Game Code defines *take* as meaning to “hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill.” Except for take related to scientific research or authorized pursuant to an approved natural community conservation plan, all take of fully protected species is prohibited.

Sections 3503 and 3503.5

Section 3503 of the California Fish and Game Code prohibits the killing of birds and the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests.

Section 1600: Streambed Alteration Agreements

In addition to regulating listed and special-status species, CDFW must be notified of activities that would substantially interfere with the natural flow—or substantially change or use any material from the channel, bed, or bank—of a lake, river, or stream. These activities are regulated under California Fish and Game Code Sections 1600–1616 and may require a streambed alteration agreement if they would adversely affect an existing fish or wildlife resource. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. CDFW may require avoidance or minimization of vegetation removal, use of standard erosion control measures, limitations on the use of heavy equipment, limitations on work periods to avoid impacts on fish and wildlife, and restoration of degraded sites or compensation for permanent habitat losses, among other conditions.

California Native Plant Protection Act

The California Native Plant Protection Act (CNPPA) of 1977 provides the California Fish and Game Commission the authority to list plant species as rare or endangered and authorizes the commission to adopt regulations prohibiting the importation of rare and endangered plants into California, take of rare and endangered plants, and the sale of rare and endangered plants. CNPPA prohibits take as well as the possession, transportation, exportation, importation, or sale of rare and threatened plants, except as a result of agricultural practices, fire control measures, timber operations, mining, or actions of public agencies or private utilities. Private landowners are also exempt from the prohibition against removing rare and endangered plants, although they must provide 10-day notice to CDFW before removing the plants. The CNPPA has mostly been superseded by CESA.

Porter-Cologne Water Quality Control Act

Pursuant to the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), California Water Code Section 13000 et seq., the State Water Resources Control Board (SWRCB) is authorized to regulate any activity that would result in discharges of waste or fill material into waters of the State, including “isolated” waters and wetlands (e.g., vernal pools and seeps), saline waters, and groundwater within the boundaries of the state (California Water Code Section 13050[e]). The Porter-Cologne Act authorizes SWRCB to adopt, review, and revise policies for all waters of the

State. It also directs SWRCB to develop and implement regional basin plans that recognize and maintain the unique characteristics of each region with regard to natural water quality as well as actual and potential beneficial uses. The basin plans are also used for maintaining water quality and addressing the water quality issues of the region. California Water Code Section 13170 also authorizes SWRCB to adopt water quality control plans on its own initiative.

A water quality control plan is designed to maintain, preserve, and enhance the quality of water resources. The purpose of the plan is to designate beneficial uses for surface water and groundwater, designate water quality objectives for the reasonable protection of those uses, and establish an implementation plan to achieve the objectives within all nine SWRCB regions of California. This may include preservation and enhancement of fish, wildlife, and designated biological habitats of special significance as well as other aquatic resources or preserves.

Clean Water Act

The Clean Water Act (CWA) was passed by Congress in 1972 with a broad mandate “to restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” The chief purpose of the CWA is to establish the basic structure for regulating discharges of pollutants into waters of the United States. The CWA authorizes the U.S. Environmental Protection Agency (EPA) to set national water quality standards and effluent limitations. It includes programs for addressing both point-source and nonpoint-source pollution. Point-source pollution is pollution that originates or enters surface waters at a single discrete location, such as an outfall structure or an excavation or construction site. Nonpoint-source pollution originates over a broader area and includes urban contaminants in stormwater runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into the nation’s waters are unlawful unless specifically authorized by a permit; permit review is the CWA’s primary regulatory tool. Aquatic resources— specifically, one drainage feature and a seasonal pond— are present on the project site and may be regulated under CWA Section 404.

Section 402: Permits for Stormwater Discharge

CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, administered by EPA. In California, SWRCB is authorized by EPA to oversee the NPDES program through the Regional Water Quality Control Boards (Regional Water Boards).

Construction General Permits are required for projects that disturb more than 1 acre of land. The Construction General Permit requires the applicant to file a public notice of intent to discharge stormwater and prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP must include a site map, a description of proposed construction activities, and the best management practices (BMPs) that will be implemented to prevent soil erosion and a discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. Permittees are required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling discharges of stormwater-related pollutants. Because the proposed project would disturb more than 1 acre of land, the applicant would apply for coverage under the Construction General Permit and prepare and implement a SWPPP.

Section 404: Permits for Placement of Fill in Waters of the United States (Including Wetlands)

Waters of the United States, including wetlands, are protected under Section 404 of the CWA. Any activity that involves a discharge of dredged or fill material into waters of the United States, including wetlands, is subject to regulation by the U.S. Army Corps of Engineers (USACE). *Waters of the United States* is defined to encompass navigable waters of the United States; interstate waters; all other waters where their use, degradation, or destruction could affect interstate or foreign commerce; tributaries of any of these waters; and wetlands that meet any of these criteria or are adjacent to any of these waters or their tributaries. *Wetlands* are defined under Section 404 as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Jurisdictional wetlands must meet three wetland delineation criteria.

- They support hydrophytic vegetation (i.e., plants that grow in saturated soil).
- They have hydric soil types (i.e., soils that are wet or moist enough to develop anaerobic conditions).
- They have wetland hydrology.

Section 401: Water Quality Certification

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must apply for water quality certification from the State. Therefore, all projects with a federal component that may affect the quality of waters of the State, including projects that require federal approval, such as a CWA Section 404 permit, must comply with CWA Section 401.

In California, CWA Section 401 is administered by SWRCB through the Regional Water Boards. All areas qualifying as waters of the United States under CWA Section 404 also qualify as waters of the State under the jurisdiction of CWA Section 401 as well as SWRCB and the Regional Water Boards; however, some areas that are considered waters of the State do not qualify as waters of the United States. SWRCB jurisdiction over streams, lakes, and ponds considered waters of the United States extends beyond the ordinary high-water mark to the top of bank or to the greatest lateral extent of riparian vegetation, whichever is greater. Isolated wetlands, non-navigable waters, and intrastate waters may also qualify as waters of the State that are subject to SWRCB jurisdiction under CWA Section 401.

Local**2030 Merced County General Plan**

The *2030 Merced County General Plan* (County of Merced [County] 2013) includes policies that recognize high-quality wetlands as an important habitat type and encourage the minimization of impacts on wetlands and habitat for threatened and endangered species.

- **Policy NR-1.4: Important Vegetative Resource Protection.** Minimize the removal of vegetative resources that stabilize slopes and reduce surface water runoff, erosion, and sedimentation.
- **Policy NR-1.5: Wetland and Riparian Habitat Buffer.** Identify wetlands and riparian habitat areas and designate a buffer zone around each area sufficient to protect them from degradation, encroachment, or loss.

- **Policy NR-1.6:** Terrestrial Wildlife Mobility. Encourage property owners within or adjacent to designated habitat connectivity corridors that have been mapped or otherwise identified by the California Department of Fish and Game (CDFG)¹ or U.S. Fish and Wildlife Service to manage their lands in accordance with such mapping programs. In the planning and development of public works projects that could physically interfere with wildlife mobility, the County shall consult with the California Department of Fish and Game or U.S. Fish and Wildlife Service to determine the potential for such effects and implement any feasible mitigation measures.
- **Policy NR-1.11:** Ongoing Habitat Protection and Monitoring. Cooperate with local, State, and federal agencies to ensure that adequate ongoing protection and monitoring occurs adjacent to rare and endangered species habitats or within identified significant wetlands.
- **Policy NR-1.12:** Wetland Avoidance. Avoid or minimize loss of existing wetland resources by careful placement and construction of any necessary new public utilities and facilities, including roads, railroads, high-speed rail, sewage disposal ponds, gas lines, electrical lines, and water/wastewater systems.
- **Policy NR-1.13:** Wetland Setbacks. Require an appropriate setback, to be determined during the development review process, for developed and agricultural uses from the delineated edges of wetlands.
- **Policy NR-1.17:** Agency Coordination. Consult with private, local, State, and federal agencies to assist in the protection of biological resources and prevention of degradation, encroachment, or loss of resources managed by these agencies.
- **Policy NR-1.21:** Special-Status Species Surveys and Mitigation. Incorporate the survey standards and mitigation requirements of State and federal resource management agencies for use in the County's review processes for both private and public projects.
- **Policy NR-2.4:** Solar Power. Encourage on-site solar power use in residential, commercial, and industrial buildings and utility-scale solar facilities in rural locations that do not harm long-term agricultural productivity and habitat values.
- **Policy NR-2.6:** Open Space Impacts. Work with public agencies and private energy providers to ensure that energy projects avoid or minimize impacts on open space, natural resources, and productive agricultural land.

Villages of Laguna San Luis Community Plan

The *Villages of Laguna San Luis Community Plan* (County of Merced 2008b) policies encourage the minimization of impacts on San Joaquin kit fox, wildlife habitat, and aquatic resources.

Section 4.3.2.6 – Open Space Corridors (within Section 4.3 – Community Design Plan)

- **Policy 1.G.5:** Preserve existing kit fox migration corridors adjacent to Jasper Sears Road, the California Aqueduct, Interstate 5, and along designated utility corridors.
- **Policy 1.G.6:** Augment kit fox corridors with additional conservation easements and multiple use zones such as stormwater detention areas where appropriate.
- **Policy 1.G.7:** Open space corridors should be preserved as parts of a comprehensive open space system with adequate provisions for control, operation, and maintenance.
- **Policy 1.G.8:** Structures should not be within 25 feet of the edge of a major drainage course.

¹ In 2013, the California Department of Fish and Game changed its name to California Department of Fish and Wildlife.

Section 4.5.2 – Open Space Plan Policies

- **Policy 1.B.1:** Retain or enhance predominant wetlands to the maximum extent possible in compliance with federal regulations.
- **Policy 1.B.2:** Enhance and expand wetland features to provide stormwater purification and retention, wildlife habitat, and visual enhancement values.
- **Policy 1.C.1:** Include hillsides over 30 percent average slope that are not ultimately planned to be part of residential parcels as components of the Open Space System.
- **Policy 1.D.1:** Utilize overhead electrical transmission line easements and underground pipeline easements as open space corridors and ensure adequate setbacks for public safety.
- **Policy 1.E.1:** Provide and maintain areas for wildlife habitat and movement such as identified wetlands and San Joaquin kit fox corridors.
- **Policy 1.E.2:** Recognize and incorporate open space linkages with existing public open space areas established for the movement of the San Joaquin kit fox (such as land owned by the U.S. Bureau of Reclamation and the California Department of Fish and Game).
- **Policy 1.E.3:** Avoid fences or other physical barriers that would disrupt or block potential wildlife movement corridors.
- **Policy 1.E.4:** Control public access to kit fox corridors to allow only limited pedestrian trail use that is needed for linkages between neighborhoods.
- **Policy 1.E.5:** Minimize public access to existing and enhanced wetland areas to protect wildlife usage.
- **Policy 1.E.6:** Enforce a leash law that prohibits random dog movement within open space corridors and designated wildlife habitat areas.

Santa Nella Habitat Conservation Plan

The Santa Nella HCP went into effect on November 28, 2005 upon issuance of an incidental take permit (TE016739-0) for San Joaquin kit fox for Arnaudo Brothers/Wathen-Castanos and River East Holding Sites. The permit was active for only 10 years, however, and expired on November 28, 2015.

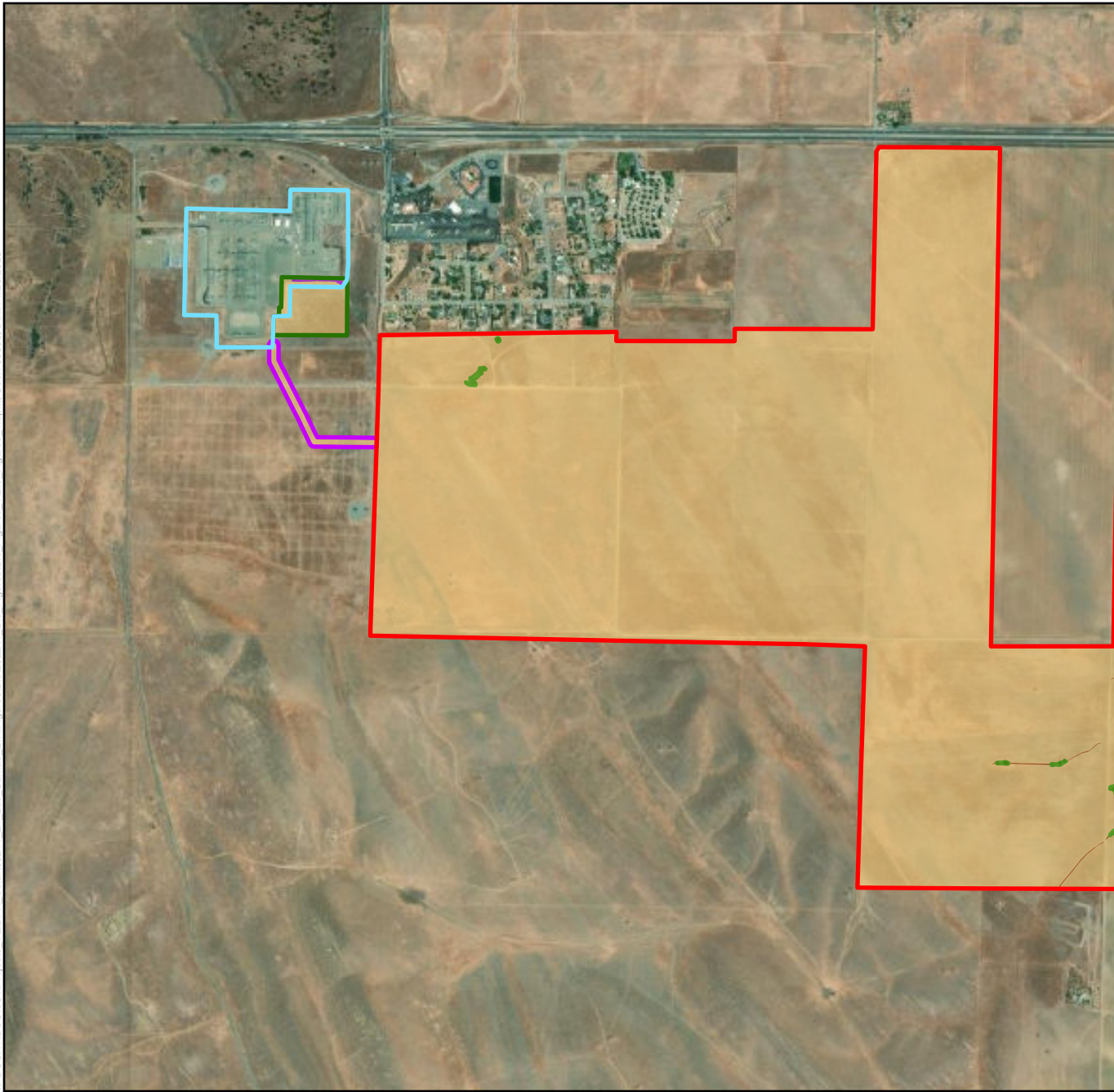
Land Cover Types

A *land cover type* is defined as the dominant character of the land surface discernible from aerial photographs, as determined by vegetation, water, or human uses. Land cover types are the most widely used units in analyzing ecosystem function, habitat diversity, natural communities, wetlands and streams, and habitat for special-status species.

Land cover types within the solar project site, PG&E substation improvements area, and off-site mitigation area are summarized in Tables 3.4-1 through 3.4-3 and identified in Figures 3.4-1a through 3.4-1c. Each land cover type is described below. As explained in Chapter 2, *Project Description*, although the solar project site covers 1,741 acres, not all areas would be subject to temporary or permanent ground disturbance (see Table 2-2 and Table 2-3).

Land cover within the off-site residential redesignation area consists of orchards, grasslands, irrigated farmland, and dry farmland. Conditions for land cover types at the residential redesignation area have not changed appreciably since certification of the Community Plan EIR. This area is further described within Section 5.8, *Biological Resources*, of the Community Plan EIR (page 5.8-4).

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- ▭ Solar Project Site
- ▭ PG&E Los Banos Substation
- ▭ PG&E Substation Improvement Area
- ▭ Proposed Gen-Tie Route
- Solar Project Site Land Cover (1,740.80 acres)**
- Terrestrial Habitat (1,740.19 acres)***
- ▭ Abandoned Ditch (1.85 acres)
- ▭ Cropland (309.07 acres)
- ▭ Non-Native Annual Grassland (1,424.17 acres)
- ▭ Non-Native Annual Grassland - Borrow Area) (2.08 acres)
- ▭ Tree Stand (3.02 acres)
- Aquatic Habitat (0.61 acre)***
- ▭ Ephemeral Drainage (0.61 acre)
- PG&E Substation Improvement Area Land Cover (10.26 acres)**
- Terrestrial Habitat (9.86 acres)***
- ▭ Developed (0.01 acre)
- ▭ Non-Native Annual Grassland (9.85 acres)
- Aquatic Habitat (0.40 acre)***
- ▭ Unvegetated Streambed (0.37 acre)
- ▭ Vegetated Streambed (0.03 acre)
- Proposed Gen-Tie Route Land Cover (4.20 acres)***
- Terrestrial Habitat (4.20 acres)***
- ▭ Non-Native Annual Grassland (4.20 acres)

*Acreages for the Proposed Gen-Tie Alignment do not include overlap with the Solar Project Site



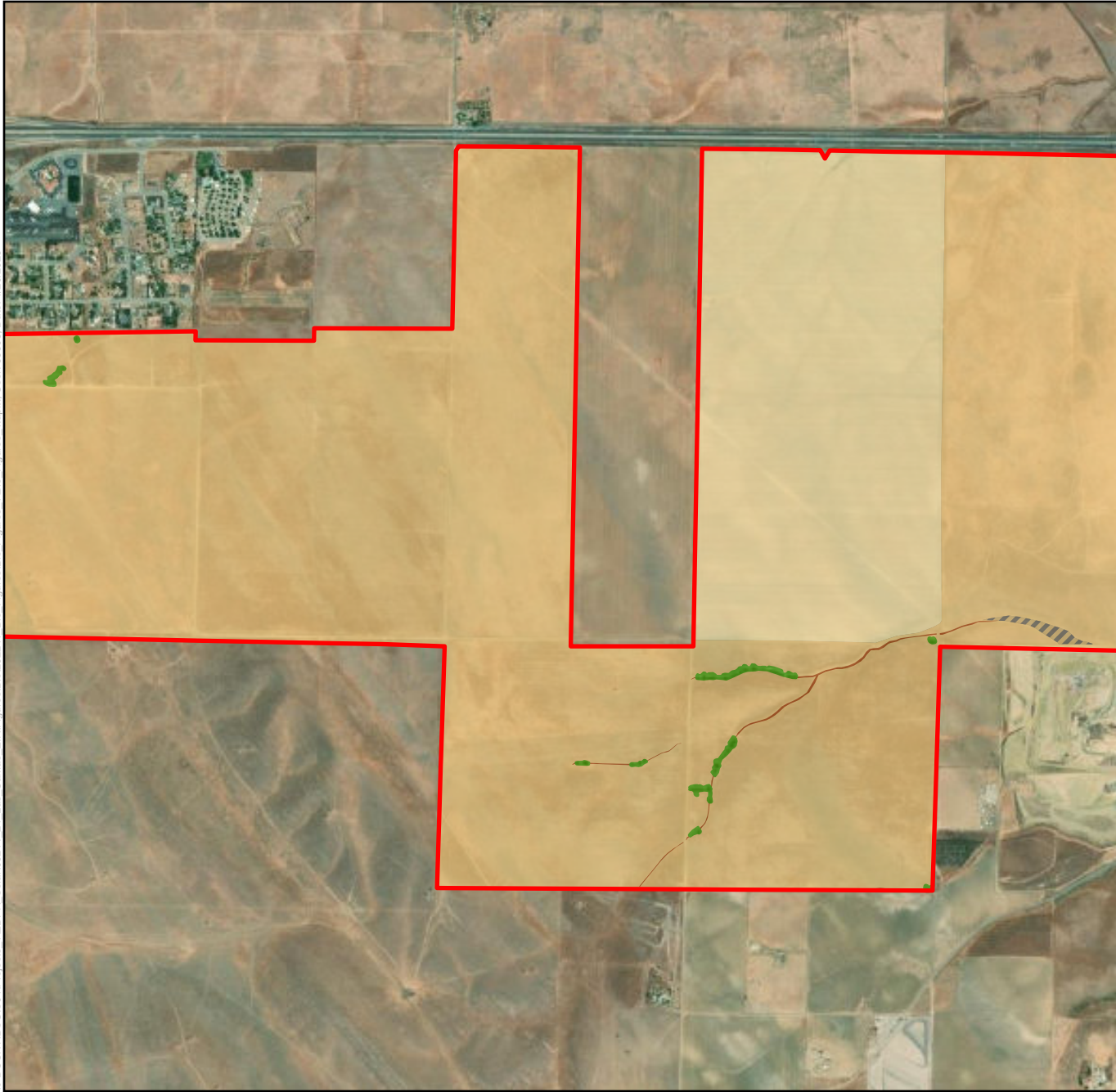
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Source: ESRI, 2022; ICF, 2019

Figure 3.4-1a
Land Cover on the Solar Project Site

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- ▭ Solar Project Site
- ▭ PG&E Los Banos Substation
- ▭ PG&E Substation Improvement Area
- ▭ Proposed Gen-Tie Route
- Solar Project Site Land Cover (1,740.80 acres)**
- Terrestrial Habitat (1,740.19 acres)***
- ▭ Abandoned Ditch (1.85 acres)
- ▭ Cropland (309.07 acres)
- ▭ Non-Native Annual Grassland (1,424.17 acres)
- ▭ Non-Native Annual Grassland - Borrow Area (2.08 acres)
- ▭ Tree Stand (3.02 acres)
- Aquatic Habitat (0.61 acre)***
- ▭ Ephemeral Drainage (0.61 acre)
- PG&E Substation Improvement Area Land Cover (10.26 acres)**
- Terrestrial Habitat (9.86 acres)***
- ▭ Developed (0.01 acre)
- ▭ Non-Native Annual Grassland (9.85 acres)
- Aquatic Habitat (0.40 acre)***
- ▭ Unvegetated Streambed (0.37 acre)
- ▭ Vegetated Streambed (0.03 acre)
- Proposed Gen-Tie Route Land Cover (4.20 acres)***
- Terrestrial Habitat (4.20 acres)***
- ▭ Non-Native Annual Grassland (4.20 acres)

*Acreages for the Proposed Gen-Tie Alignment do not include overlap with the Solar Project Site



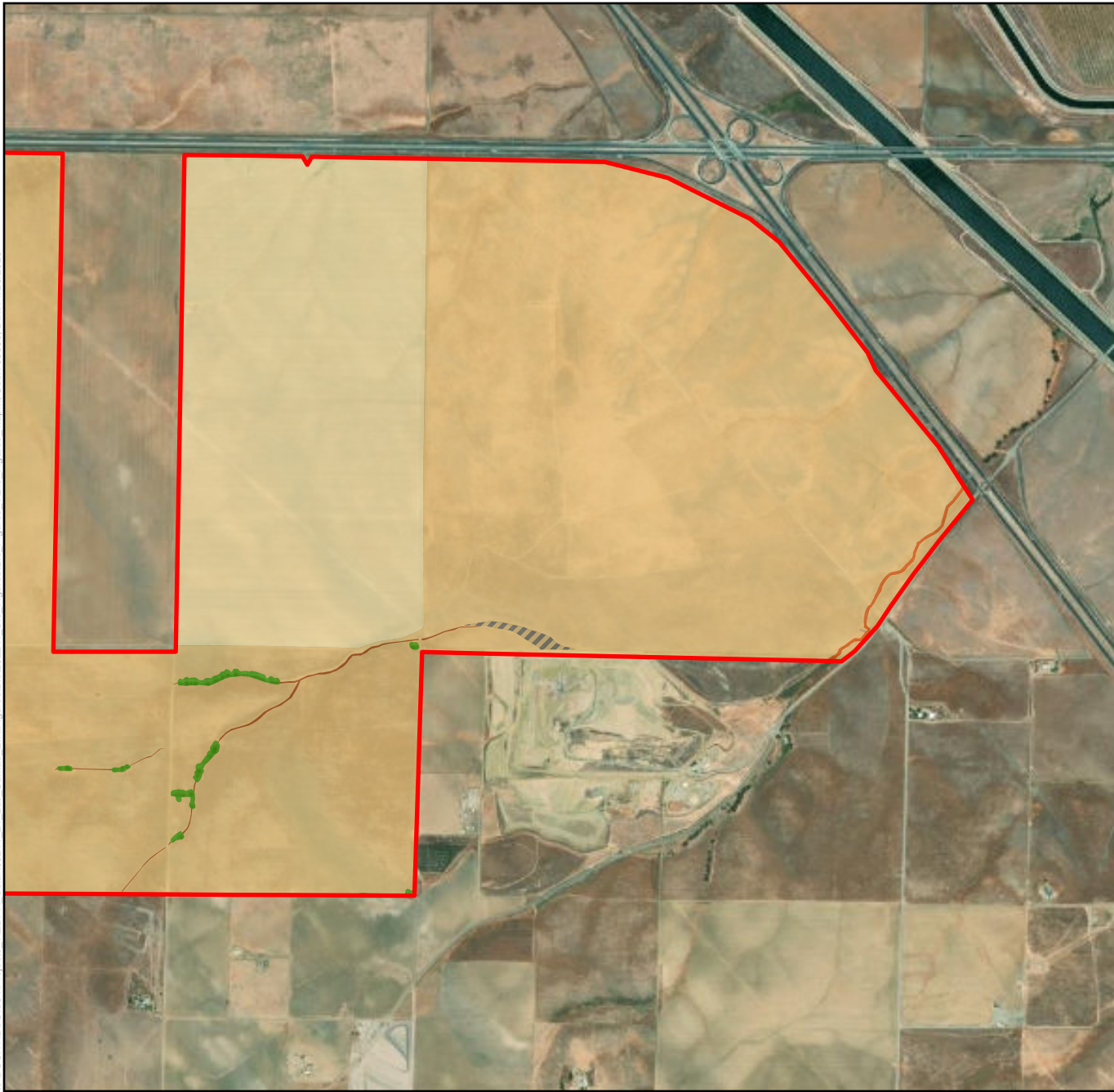
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Source: ESRI, 2022; ICF, 2019

Figure 3.4-1b
Land Cover on the Solar Project Site

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- Solar Project Site
- PG&E Los Banos Substation
- PG&E Substation Improvement Area
- Proposed Gen-Tie Route
- Solar Project Site Land Cover (1,740.80 acres)**
- Terrestrial Habitat (1,740.19 acres)**
- Abandoned Ditch (1.85 acres)
- Cropland (309.07 acres)
- Non-Native Annual Grassland (1,424.17 acres)
- Non-Native Annual Grassland - Borrow Area (2.08 acres)
- Tree Stand (3.02 acres)
- Aquatic Habitat (0.61 acre)**
- Ephemeral Drainage (0.61 acre)
- PG&E Substation Improvement Area Land Cover (10.26 acres)**
- Terrestrial Habitat (9.86 acres)**
- Developed (0.01 acre)
- Non-Native Annual Grassland (9.85 acres)
- Aquatic Habitat (0.40 acre)**
- Unvegetated Streambed (0.37 acre)
- Vegetated Streambed (0.03 acre)
- Proposed Gen-Tie Route Land Cover (4.20 acres)***
- Terrestrial Habitat (4.20 acres)**
- Non-Native Annual Grassland (4.20 acres)

*Acreages for the Proposed Gen-Tie Alignment do not include overlap with the Solar Project Site



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Feet

1:20,000

Source: ESRI, 2022; ICF, 2019

Figure 3.4-1c
Land Cover on the Solar Project Site

Table 3.4-1. Approximate Acreage of Land Cover Types within the Solar Project Site

Land Cover/Habitat Type	Acres
Terrestrial Habitat	
Abandoned ditch	1.85
Cropland	309.07
Nonnative annual grassland	1,424.17
Nonnative annual grassland – borrow area	2.08
Tree stand	3.02
<i>Subtotal</i>	<i>1,740.19</i>
Aquatic Habitat	
Ephemeral drainage	0.61
<i>Subtotal</i>	<i>0.61</i>
Total	1,740.80

Table 3.4-2. Approximate Acreage of Land Cover Types within the PG&E Substation Improvements Area

Land Cover/Habitat Type	Acres
Terrestrial Habitat	
Nonnative annual grassland	9.85
Developed	0.01
<i>Subtotal</i>	<i>9.86</i>
Aquatic Habitat	
Unvegetated streambed	0.37
Vegetated streambed	0.03
<i>Subtotal</i>	<i>0.40</i>
Total	10.26

Table 3.4-3. Approximate Acreage of Land Cover Types within the Off-site Mitigation Area

Land Cover/Habitat Type	Acres
Terrestrial Habitat	
Nonnative annual grassland	1,390.0
Vacant or disturbed	108.0
<i>Subtotal</i>	<i>1,498.0</i>
Aquatic Habitat	0
<i>Subtotal</i>	<i>0</i>
Total	1,498.0

The ephemeral drainage and pond mapped within the solar project site are not considered potential waters of the United States. However, this aquatic habitat may be subject to the jurisdiction of the State as well as State regulations under the Porter-Cologne Act and the CDFW Section 1600 Lake and Streambed Alteration Agreement. Based on ICF's delineation of the unvegetated streambed and

vegetated streambed within the PG&E substation improvements area, these aquatic habitats are not considered potential waters of the United States. The aquatic habitats may be considered jurisdictional under the Porter-Cologne Act and the CDFW Section 1600 Lake and Streambed Alteration Agreement.

Abandoned Ditch

The abandoned ditch land cover type consists of an upland area of historically constructed features that were once used to convey water, presumably to flood irrigate pastureland (Figure 3.4-1b). These features form linear depressions on the landscape; however, no evidence of a recent water flow was identified in the field. Analysis of historic aerial photographs and observations from field work determined that the flow was cut off during construction activities related to the adjacent landfill. Specifically, the portion of the drainage system that is directly north of the landfill appears to have been used as a borrow area. The vegetation within these features is not discernable from the surrounding nonnative annual grassland. Instances where there is a compositional shift in vegetation are most likely due to differences in the disturbance regime. This is because the abandoned ditch does not receive the routine disking/light ripping disturbance that occurs frequently in the adjacent nonnative annual grasslands/dryland farming agricultural fields. In the case of the scattered trees present, it could also be the result of previous planting and irrigation, as evidenced by the inactive irrigation tubing observed at the base of the trees.

The abandoned ditches are dominated by herbaceous vegetation consistent with the nonnative upland annual grassland community and ruderal species. Common species include foxtail barley (*Hordeum murinum*, facultative upland [FACU]), ripgut brome (*Bromus diandrus*, no indicator [NI]), coastal heron's bill (*Erodium cicutarium*, NI), cheeseweed (*Malva parviflora*, NI), Russian thistle (*Salsola tragus*, FACU), and redscale (*Atriplex rosea*, FACU). Patches of the highly invasive perennial pepperweed (*Lepidium latifolium*, facultative [FAC]) are present, as are infrequent patches of salt grass (*Distichlis spicata*, FAC) and seaside heliotrope (*Heliotropium curassavicum* var. *oculatum*, FACU). Red iron bark trees (*Eucalyptus sideroxylon*, NI) are present along the upper northern banks of most of these features. Wetland or riparian vegetation was not observed within the abandoned ditches. Because this land cover type represents an upland area, it is not considered a potentially jurisdictional aquatic resource. No special-status plants are expected to occur in this habitat type within the solar project site.

Cropland

Cropland within the solar project site consists of areas where native vegetation has been cleared for dryland farming of crops such as winter wheat. This habitat type does not include rangeland, which is often characterized as an agricultural land use; rangeland within the solar project site is classified as nonnative annual grassland. No special-status plants are expected to occur in this habitat type within the solar project site.

Nonnative Annual Grassland

Nonnative annual grassland in the project site consists of open areas that lack woody vegetation; these areas are characterized by herbaceous vegetation dominated by nonnative grasses and flowering forbs. This land cover type is dominated by grasses and forbs that originated elsewhere; they have aggressive life cycles and have outcompeted the native grassland vegetation.

No special-status plants are expected to occur in this habitat type within the solar project site and PG&E substation improvements area. It is not known if special-status plants occupy the mitigation lands.

Tree Stands

No forest or woodland habitats occur within the project site. However, small stands of trees are present within the solar project site. A few individual trees are also present at scattered locations within the solar project site. These individual trees are included in and discussed as components of the tree stand habitat. No special-status plants are expected to occur in this habitat type within the solar project site.

Aquatic Habitats

Aquatic habitats were delineated in May 2019 as well as April and November 2022. Four types of aquatic habitat were identified: a pond and an ephemeral drainage within the solar project site and a vegetated and unvegetated streambed within the PG&E substation improvements area.

Ponds

One pond, located within the ephemeral drainage at the southeast corner of the solar project site, is present, although not within an area that would be subject to temporary or permanent ground disturbance. The pond did not hold water during the May 2019 field survey, although the pond appears to hold water during heavy rain (viewed via Google 2019). The pond may have been constructed to either capture and hold water for livestock or capture and hold water during large storm events to minimize downstream flooding. No special-status plants are expected to occur in this habitat type within the solar project site.

Ephemeral Drainage

One ephemeral drainage is present within the solar project site, although not within an area that would be subject to temporary or permanent ground disturbance. The drainage is thought to be inundated seasonally during years with above-normal rainfall, primarily during or immediately following rainfall events. Vegetation within the ephemeral drainage consisted of nonnative annual grassland species with scattered perennial pepperweed (*Lepidium latifolium*). No special-status plants are expected to occur in this habitat type within the solar project site.

Unvegetated Streambed

One unvegetated streambed is present within the PG&E substation improvements area. The stream is a non-wetland drainage that originates from runoff on the western portion of the existing PG&E substation. This feature was largely unvegetated (i.e., bare), with sparsely occurring herbaceous species such as bermudagrass (*Cynodon dactylon*), Great Valley gumweed (*Grindelia camporum*), and Canada horseweed (*Erigeron canadensis*). The western terminus was unvegetated and contained nothing but 6- to 12-inch rock riprap. This feature is most likely fed by runoff from the substation facility. No special-status plants are expected to occur in this habitat type within the PG&E substation improvements area.

Vegetated Streambed

One vegetated streambed is present within the PG&E substation improvements area. A leaky pipe at the northern end of the PG&E substation provides water to this feature. Vegetation in this feature was dominated by Bermuda grass, broadleaf cattail (*Typha latifolia*), and Great Valley gumweed.

Occasional shrubs and trees also occurred within this feature, such as arroyo willow (*Salix lasiolepis*), mule fat (*Baccharis salicifolia*), and coyote brush (*Baccharis pilularis*). No special-status plants are expected to occur in this habitat type within the PG&E substation improvements area.

Special-Status Species

Special-status plants and animals that are legally protected under the ESA, CESA, or other regulations, as well as species that are considered sufficiently rare by the scientific community to qualify for such listing, occur in or near the study area. Special-status species are defined as follows:

- Species that are listed or proposed for listing as threatened or endangered under the ESA (50 CFR 17.11 [listed animals]; 50 CFR 17.12 [listed plants]; and various notices in the Federal Register).
- Species that are candidates for possible future listing as threatened or endangered under the ESA (77 FR 69993, November 21, 2012).
- Species that are identified by USFWS as birds of conservation concern.
- Species that are listed or proposed for listing by the State of California as threatened or endangered under CESA (14 California Code of Regulations 670.5).
- Species that meet the definitions of rare or endangered under CEQA (CEQA Guidelines Section 15380).
- Plants listed as rare under the CNPPA (California Fish and Game Commission).
- Plants with a CRPR of 1A, 1B, 2A, or 2B (CDFW 2022b).
- Animals listed as species of special concern on CDFW's Special Animals List (CDFW 2022a).
- Animals that are fully protected in California (California Fish and Game Code Sections 3511 [birds], 4700 [mammals], 5050 [amphibians and reptiles], and 5515 [fish]).

Figure 3.4-2 shows California Natural Diversity Database (CNDDDB) records for special-status species within 5 miles of the study area boundary. A summary of special-status plant and wildlife species known to occur or with potential to occur in the study area is provided below.

Special-Status Plants

Based on a review of the CNDDDB (CDFW 2019b) and the California Native Plant Society inventory, 19 special-status plant species were identified as having the potential to occur in the project vicinity (Table 3.4-3). The CNDDDB was reviewed again in 2022 (CDFW 2022c) for potential new occurrences, but no new records were found. The grassland present at the project site is the only vegetation type that has the potential to support the six special-status plants listed below. The remaining species in Table 3.4-3 are not expected to occur on the project site, based on specific microhabitat conditions and the geographic range.

- Spiny-sepaled button-celery (*Eryngium spinosepalum*)—CRPR 1B.2
- Munz's tidy-tips (*Layia munzii*)—CRPR 1B.2
- Panoche pepper-grass (*Lepidium jaredii* ssp. *Album*)—CRPR 1B.2
- Shining navarretia (*Navarretia nigelliformis* ssp. *Radians*)—CRPR 1B.2
- Prostrate vernal pool navarretia (*Navarretia prostrata*)—CRPR 1B.1
- California alkali grass (*Puccinellia simplex*)—CRPR 1B.2

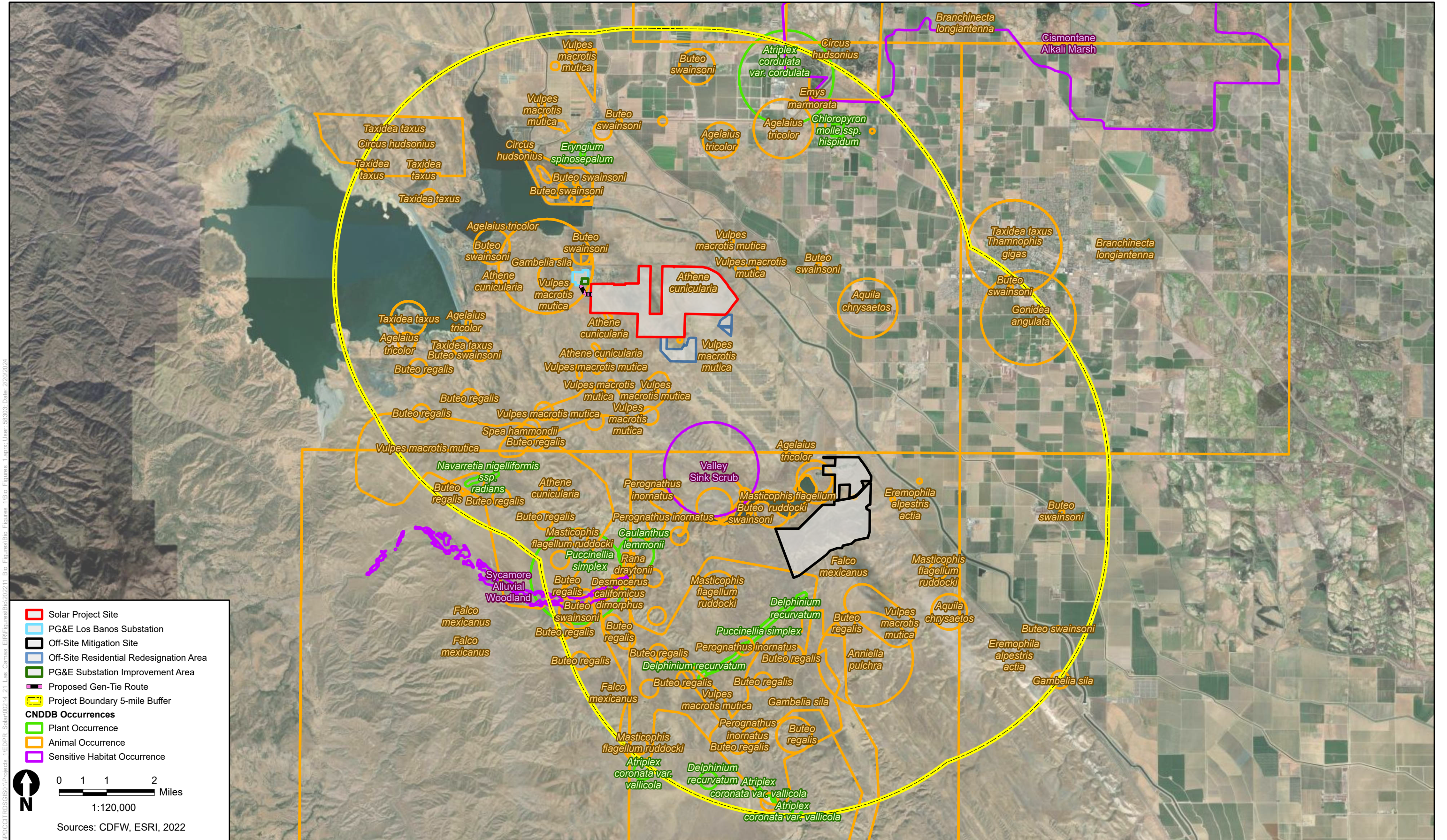


Figure 3.4-2
CNDDDB Occurrences within 5 Miles of Project Boundary

Table 3.4-3. Special-Status Plants Known to Occur or that May Occur in the Las Camas Solar Development Vicinity

Species	Status ^a Federal/State/ CRPR	California Distribution	Habitats	Blooming Period	Likelihood to Occur in Study Area
<i>Astragalus tener</i> var. <i>tener</i> Alkali milk-vetch	-/-/1B.2	Historically found in western San Joaquin Valley, San Francisco Bay Area, and Monterey County; most likely extirpated from all historical occurrences, except those in Merced, Solano, and Yolo Counties, below 120 feet in elevation	Playas and grasslands with adobe clay soils and alkaline vernal pools	March– June	None —May 2019 botanical surveys did not find an occurrence or suitable habitat present in the study area.
<i>Atriplex cordulata</i> var. <i>cordulata</i> Heartscale	-/-/1B.2	Western Central Valley and valleys of adjacent foothills, at 0–1,500 feet in elevation	Alkali grasslands, alkali meadows, alkali scrublands	April– October	None —May 2019 botanical surveys did not find an occurrence or suitable habitat present in the study area.
<i>Atriplex minuscula</i> Lesser saltscale	-/-/1B.1	Sacramento and San Joaquin Valley, Butte County to Kern County, at 50–650 feet in elevation	Alkali sink and sandy alkaline soils in grasslands, chenopod scrub	May– October	None —May 2019 botanical surveys did not find an occurrence or suitable habitat present in the study area.
<i>Atriplex persistens</i> Vernal pool smallscale	-/-/1B.2	Scattered occurrences throughout the Central Valley, at 30–350 feet in elevation	Alkali vernal pools	June– October	None —May 2019 botanical surveys did not find an occurrence or suitable habitat present in the study area.
<i>Caulanthus lemmonii</i> Lemmon’s jewel- flower	-/-/1B.2	Southeast San Francisco Bay Area and south through the southern Coast Ranges and adjacent San Joaquin Valley to Ventura County, at 80–3,600 feet in elevation	Dry, exposed slopes in grasslands and pinyon-juniper woodland	March– May	None —May 2019 botanical surveys did not find an occurrence or suitable habitat present in the study area.
<i>Chloropyron molle</i> ssp. <i>hispidum</i> Hispid bird’s-beak	-/-/1B.1	Central Valley (Kern, Fresno, Merced, Placer, and Solano Counties) and Alameda County, at 3–500 feet in elevation	Meadows, grasslands, and playas; on alkaline soils	June– September	None —May 2019 botanical surveys did not find an occurrence or suitable habitat present in the study area.

Species	Status ^a Federal/State/ CRPR	California Distribution	Habitats	Blooming Period	Likelihood to Occur in Study Area
<i>Delphinium recurvatum</i> Recurved larkspur	-/-/1B.2	San Joaquin Valley and interior valleys of the southern Coast Ranges, Contra Costa County to Kern County, at 10–2,500 feet in elevation	Alkaline soils in annual grassland, saltbush scrub, cismontane woodland, vernal pools	March–June	None —May 2019 botanical surveys did not find an occurrence or suitable habitat present in the study area.
<i>Eryngium racemosum</i> Delta button-celery	-/E/1B.1	San Joaquin Valley, including San Joaquin, Merced, and Stanislaus Counties and extending to Calaveras County to the east and Contra Costa County to the north, at 10–100 feet in elevation	Riparian scrub, wetland	June–October	None —May 2019 botanical surveys did not find an occurrence or suitable habitat present in the study area.
<i>Eryngium spinosepalum</i> Spiny-sepaled button-celery	-/-/1B.2	San Joaquin Valley and interior valleys of the southern Coast Ranges, Contra Costa County to Kern County, at 250–3,200 feet in elevation	Valley and foothill grassland, vernal pool, wetland	April–July	Moderate —Although May 2019 botanical surveys did not find an occurrence, suitable grassland habitat is present in the study area; however, the habitat is degraded by weeds and grazing.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i> Coulter’s goldfields	-/-/1B.1	San Joaquin Valley and interior valleys of the southern Coast Ranges, Contra Costa County to Kern County, 3–4,000 feet in elevation	Alkali playa, marsh and swamp, salt marsh, vernal pool, wetland	February–June	None —May 2019 botanical surveys did not find an occurrence or suitable habitat present in the study area.
<i>Layia munzii</i> Munz’s tidy-tips	-/-/1B.2	Fresno, Kern, San Benito, and San Luis Obispo Counties, at 450–2,100 feet in elevation	Chenopod scrub, valley and foothill grassland	March–June	Moderate —Although May 2019 botanical surveys did not find an occurrence, suitable grassland habitat is present in the study area; however, the habitat is degraded by weeds and grazing.

Species	Status ^a Federal/State/ CRPR	California Distribution	Habitats	Blooming Period	Likelihood to Occur in Study Area
<i>Lepidium jaredii</i> <i>ssp. album</i> Panoche pepper- grass	-/-/1B.2	Fresno, San Benito, and San Luis Obispo Counties, at 600–2,500 feet in elevation	Valley and foothill grassland	February– June	Moderate —Although May 2019 botanical surveys did not find an occurrence, suitable habitat is present in the study area; however, the habitat is degraded by weeds and grazing.
<i>Malacothamnus</i> <i>hallii</i> Hall’s bush-mallow	-/-/1B.2	Contra Costa, Merced, Santa Clara, San Mateo, Stanislaus Counties, at 30–2,300 feet in elevation	Chaparral, coastal scrub, ultramafic soils	May– September	None —May 2019 botanical surveys did not find an occurrence or suitable habitat present in the study area.
<i>Navarretia</i> <i>nigelliformis</i> <i>ssp. radians</i> Shining navarretia	-/-/1B.2	Inner and outer South Coast Ranges, at 525–1,770 feet in elevation	Cismontane woodland, valley and foothill grassland, vernal pool, wetland	April– July	Moderate —Although May 2019 botanical surveys did not find an occurrence, suitable grassland habitat is present in the study area; however, the habitat is degraded by weeds and grazing.
<i>Navarretia</i> <i>prostrata</i> Prostrate vernal pool navarretia	-/-/1B.1	San Joaquin Valley, Central Coast, San Francisco Bay Area, inner and outer southern Coast Ranges, South Coast, and Peninsular Ranges less than 2,100 feet in elevation	Coastal scrub, meadow and seep, valley and foothill grassland, vernal pool, wetland	April– July	Moderate —Although May 2019 botanical surveys did not find an occurrence, suitable grassland habitat is present in the study area; however, the habitat is degraded by weeds and grazing.
<i>Puccinellia simplex</i> California alkali grass	-/-/1B.2	Tehachapi Mountains, Sacramento Valley, San Joaquin Valley, San Francisco Bay Area, below 2,700 feet in elevation	Chenopod scrub, meadow and seep, valley and foothill grassland, vernal pool	March– May	Moderate —Although May 2019 botanical surveys did not find an occurrence, suitable grassland habitat is present in the study area; however, the habitat is degraded by weeds and grazing.

Species	Status ^a Federal/State/ CRPR	California Distribution	Habitats	Blooming Period	Likelihood to Occur in Study Area
<i>Sagittaria sanfordii</i> Sanford's arrowhead	-/-/1B.2	North Coast, Klamath Ranges, Cascade Range foothills, Sacramento Valley, San Joaquin Valley, and South Coast, at 3- 2,100 feet in elevation	Marsh and swamp, wetland	May- October	None —May 2019 botanical surveys did not find an occurrence or suitable habitat present in the study area.
<i>Streptanthus insignis</i> ssp. <i>insignis</i> Arburua ranch jewelflower	-/-/1B.2	Inner southern Coast Ranges, at 750-2,800 feet in elevation	Coastal scrub, ultramafic soil	March- May	None —May 2019 botanical surveys did not find an occurrence or suitable habitat present in the study area.
<i>Trichocoronis wrightii</i> var. <i>wrightii</i> Wright's trichocoronis	-/-/2B.2	Sacramento Valley, San Joaquin Valley, and the South Coast, below 1,500 feet in elevation	Marsh and swamp, meadow and seep, riparian forest, vernal pool, wetland	May- September	None —May 2019 botanical surveys did not find an occurrence or suitable habitat present in the study area.

Status explanations:

Federal

- E = listed as endangered under the federal Endangered Species Act.
- = no listing.

State

- E = listed as endangered under the California Endangered Species Act.
- = no listing.

California Rare Plant Rank (CRPR)

- 1A = List 1A species: presumed extinct in California.
- 1B = List 1B species: rare, threatened, or endangered in California and elsewhere.
- 2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere.

CRPR Code Extensions:

- 0.1 = seriously endangered in California (more than 80% of occurrences threatened/high degree and immediacy of threat).
- 0.2 = fairly endangered in California (20%-80% of occurrences threatened).
- B = Populations uncertain or extirpated in the county.

Botanical surveys from May 13 to 16, 2019, were conducted during the appropriate time for identifying all six special-status plants with potential habitat at the project site. None of the special-status plant species were observed during the survey. In addition, the nonnative annual grassland habitat is dominated by noxious weeds, such as rip-gut brome, which form a dense cover that out-competes native vegetation. Because the results from the protocol-level surveys for special-status plants were negative and suitable habitat is not present, special-status plants do not have the potential to occur at the project site.

Special-Status Wildlife

Based on a review of the CNDDDB (CDFW 2019a), the USFWS species list (USFWS 2019), as well as other environmental documents prepared for projects near the study area, 33 special-status wildlife species were initially identified as having potential to occur in the study area and vicinity (Table 3.4-4) (Figure 3.4-2). The CNDDDB was reviewed again in 2022 (CDFW 2022c) for potential new occurrences, but no new records were found. Thirteen of the 33 special-status species identified in Table 3.4-4 were determined through on-site field investigation to have no potential to occur in the study area, based on a lack of the specific habitat components essential to the species' life cycles (e.g., aquatic habitat for foothill yellow-legged frogs [*Rana boylei*]). Three other special-status mammals, pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western mastiff bat (*Eumops perotis californicus*), may occasionally occur at the study area during migration and while foraging, but because the project site lacks substrate for hibernacula, the project does not present a risk of direct adverse effects. As a result, these species are not addressed in detail in this report because they are not known to nest or breed in the area.

Nonnative grasslands in the study area have low to high potential to support the special-status wildlife species listed below. Suitable habitat, as well as the likelihood of occurrence in the study area for these species, is described in Table 3.4-4 and discussed below.

- Crotch's Bumble Bee (*Bombus crotchii*)—State endangered candidate species
- Blunt-nosed leopard lizard (*Gambelia sila*)—State and federally listed as endangered.
- San Joaquin coachwhip (*Masticophis flagellum ruddocki*)—CDFW species of special concern.
- Blainville's horned lizard (*Phrynosoma blainvillii*)—CDFW species of special concern.
- Bald eagle (*Haliaeetus leucocephalus*)—State listed as endangered.
- Golden eagle (*Aquila chrysaetos*)—California fully protected.
- Swainson's hawk (*Buteo swainsoni*)—State listed as threatened.
- White-tailed kite (*Elanus leucurus*)—California fully protected.
- Northern harrier (*Circus cyaneus*)—CDFW species of special concern.
- Western burrowing owl (*Athene cunicularia*)—CDFW species of special concern.
- Loggerhead shrike (*Lanius ludovicianus*)—CDFW species of special concern.
- Tricolored blackbird (*Agelaius tricolor*)—State listed as threatened.
- Western red bat (*Lasiurus blossevillii*)—CDFW species of special concern.
- American badger (*Taxidea taxus*)—CDFW species of special concern.
- San Joaquin kit fox (*Vulpes macrotis mutica*)—State listed as threatened; federally listed as endangered.

Table 3.4-4. Special-Status Wildlife Species Known to Occur or that May Occur in the Las Camas Solar Development Study Area and Vicinity

<i>Scientific Name</i> Common Name	Status ^a Federal/State	Geographic Distribution	Habitat Requirements	Likelihood to Occur in the Study Area
Invertebrates				
<i>Bombus crotchii</i> Crotch's Bumble Bee	-/CE	Occurs throughout the Pacific Coast, Western Desert, and adjacent foothills throughout most of the state's southwestern region.	Found in open grassland and scrub. Nests underground in abandoned rodent burrows. Colonies are annual and only the newly mated queens overwinter. The queens emerge from hibernation in early spring to search for nest sites. Host plant food includes milkweed (<i>Asclepias</i> sp.), pincushion (<i>Chaenactis</i> sp.), lupine (<i>Lupinus</i> sp.), bur clover (<i>Medicago</i> sp.), phacelia (<i>Phacelia</i> sp.), and sage (<i>Salvia</i> sp.).	Low —The majority of the study area has been disturbed by past cultivation of crops. Grasslands in the study area are generally dense and not suitable.
<i>Branchinecta longiantenna</i> Longhorn fairy shrimp	E/-	Eastern margin of central Coast Ranges from Contra Costa County to San Luis Obispo County; disjunct population in Madera County	Small, clear pools in sandstone rock outcrops of clear to moderately turbid clay- or grass-bottomed pools	None —Rock outcrop pools are not present in the study area.
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	T/-	Central Valley, central and southern Coast Ranges from Tehama County to Santa Barbara County; isolated populations also in Riverside County	Common in vernal pools; also found in sandstone rock outcrop pools	None —No alkali wetlands, small ephemeral ponds, or vernal pools in the study area to provide suitable breeding habitat.
<i>Lepidurus packardi</i> Vernal pool tadpole shrimp	E/-	Shasta County south to Merced County	Vernal pools and ephemeral stock ponds	None —No alkali wetlands, small ephemeral ponds, or vernal pools in the study area to provide suitable breeding habitat.
<i>Desmocerus californicus</i> Valley elderberry longhorn beetle	T/-	Streamside habitats below 3,000 feet in elevation throughout the Central Valley	Riparian and oak savanna habitats with elderberry shrubs and streamside habitats below 3,000 in elevation; elderberry shrub is the host plant	None —Elderberry host plants not observed in the study area.

Scientific Name Common Name	Status^a Federal/State	Geographic Distribution	Habitat Requirements	Likelihood to Occur in the Study Area
Fish				
<i>Hypomesus transpacificus</i> Delta smelt	T/E	Primarily in the Sacramento–San Joaquin Estuary but has been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay	Estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 parts per thousand	None —No suitable habitat (estuary) in the study area.
Amphibians				
<i>Ambystoma californiense</i> California tiger salamander	T/T	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet, and coastal region from Sonoma County south to Santa Barbara County	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy	None —Species has not been previously detected in the study area. Closest record is 2.7 miles from the study area (CDFW 2022c). No ponds, alkali wetlands, or vernal pools in the study area during the habitat assessment conducted for California tiger salamander. Protocol-level surveys were conducted for California tiger salamander in 2023, which was an above average rainfall year. A total of 10 features were surveyed within a 1.24-mile radius of the study area. One feature that was surveyed was located in the study area. No California tiger salamander were identified in any of the features surveyed.

<i>Scientific Name</i> Common Name	Status ^a Federal/State	Geographic Distribution	Habitat Requirements	Likelihood to Occur in the Study Area
<i>Rana boylei</i> Foothill yellow-legged frog	-/SSC	Occurs in the Klamath, Cascade, north Coast, south Coast, and Transverse Ranges and Sierra Nevada up to approximately 6,000 feet	Creeks or rivers in woodland, forest, mixed chaparral, and wet meadow habitats with rock and gravel substrate and low overhanging vegetation along the edge; usually found near riffles with rocks and sunny banks nearby	None —No suitable stream habitat present in the study area or within 500 feet.
<i>Rana draytonii</i> California red-legged frog	T/SSC	Found along the coast and coastal mountain ranges of California from Mendocino County to San Diego County and in the Sierra Nevada from Butte County to Stanislaus County	Permanent and semipermanent aquatic habitats, such as creeks and coldwater ponds with emergent and submergent vegetation; may estivate in rodent burrows or cracks during dry periods	None —No ponds were located within the study area. Roadside creek approximately 0.1 mile southeast of the study area, along Billy Wright Road, and a stock pond at the north end of the Wright Solar Park were evaluated; they do not provide an adequate ponding depth or duration, except in extremely wet years.
<i>Spea hammondi</i> Western spadefoot	-/SSC	Central Valley and southern Coast Ranges and foothills	In winter, breeds in vernal pools, seasonal wetlands, and streams with a minimum 2- to 3-week inundation period; in summer, aestivates in grassland habitat, soil crevices, and rodent burrows	None —No alkali wetlands, small ephemeral ponds, or vernal pools in the study area to provide suitable breeding habitat.
Reptiles				
<i>Gambelia sila</i> Blunt-nosed leopard lizard	E/E	Western Merced County south to Kern County and into western Tulare County, with isolated population in western Madera County; populations in Carrizo Plain and Cuyama Valley	Typically inhabits open, sparsely vegetated areas of low relief on the San Joaquin Valley floor and in the surrounding foothills; found in annual grasslands and valley sink scrub and requires small mammal burrows for shelter from predators and temperature extremes	Low —The majority of the study area has been disturbed by past cultivation of crops. Grasslands in the study area are generally dense and not suitable. Ground squirrel burrows and other fossorial mammal burrows are generally not dense within the study area. Closest CNDDDB record partially overlaps with the northwest corner of the site but is not recent and lacks specificity (CDFW 2022c).

Scientific Name Common Name	Status^a Federal/State	Geographic Distribution	Habitat Requirements	Likelihood to Occur in the Study Area
<i>Actinemys marmorata</i> Western pond turtle	-/SSC	Uncommon to common in suitable aquatic habitat throughout California west of the Sierra-Cascade crest; absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries	Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and watercress, cattails, water lilies, or other aquatic vegetation in woodlands, grasslands, and open forests; nests are typically constructed in upland habitat within 0.25 mile of aquatic habitat	None —No ponds were located within the study area or within 1 mile of the study area. No flowing water was present in the drainage off Billy Wright Road near the study area.
<i>Masticophis flagellum ruddocki</i> San Joaquin coachwhip	-/SSC	From Colusa County in the Sacramento Valley southward to the Grapevine in the San Joaquin Valley and westward into the inner Coast Ranges, with an isolated population at Sutter Buttes; known elevational range is 66–2,953 feet	Open, dry vegetative associations with little or no tree cover; in valley grassland and saltbush scrub associations, often in association with mammal burrows	Moderate —Suitable grassland habitat is present within the study area; known occurrences just south of the study area (CDFW 2022c).
<i>Phrynosoma blainvillii</i> Blainville’s (Coast) horned lizard	-/SSC	Sacramento Valley, including foothills, south to Southern California and Coast Ranges south of Sonoma County; below 4,000 feet in Northern California	Grasslands, brushlands, woodlands, and open coniferous forests with sandy or loose soil; requires abundant ant colonies for foraging	Low —Annual grasslands provide potential habitat for the species, but microhabitat conditions such as loose soils and open areas are limited within the study area.
<i>Thamnophis gigas</i> Giant garter snake	T/T	Central Valley from the vicinity of Burrell in Fresno County to an area near Chico in Butte County; extirpated from areas south of Fresno	Sloughs, canals, low-gradient streams, and freshwater marshes where there is a prey base of small fish and amphibians, along with irrigation ditches and rice fields; requires grassy banks and emergent vegetation for basking and areas of high ground protected from flooding during winter	None —No suitable aquatic habitat is present in the study area. There are no CNDDDB records within 5 miles of the site.

<i>Scientific Name</i> Common Name	Status ^a Federal/State	Geographic Distribution	Habitat Requirements	Likelihood to Occur in the Study Area
Birds				
<i>Haliaeetus leucocephalus</i> Bald eagle	D/E	Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin and was reintroduced into central coast; winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierra Nevada, and east of the Sierra Nevada south of Mono County	Nests and roosts in coniferous forests within 1 mile of a lake, reservoir, or stream or the ocean	Moderate —The study area is located in proximity to San Luis Reservoir and O’Neill Forebay, which provide suitable nesting and foraging habitat. The study area provides suitable winter foraging habitat. There are no CNDDDB records within 5 miles of the site.
<i>Aquila chrysaetos</i> Golden eagle	-/FP	Foothills and mountains throughout California; uncommon nonbreeding visitor to lowlands such as the Central Valley	Nests in cliffs and escarpments or tall trees; forages in annual grasslands, chaparral, or oak woodlands that provide abundant medium and large-sized mammals for prey	High —Suitable nesting and foraging habitat is present in and surrounding the study area. This species has been documented nesting within 2 miles of the study area (CDFW 2022c).
<i>Buteo swainsoni</i> Swainson’s hawk	-/T	Lower Sacramento and San Joaquin Valleys, Klamath Basin, and Butte Valley; highest nesting densities occur near Davis and Woodland, Yolo County	Nests in oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, and grain fields	High (Occupied) —The species was identified nesting in the northeast portion of the study area in a cottonwood tree. An additional active nest is directly adjacent to the southwest portion of the study area. Suitable foraging habitat is located throughout the site.
<i>Elanus leucurus</i> White-tailed kite	-/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexican border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	Moderate —Suitable foraging habitat occurs in the study area. Nesting habitat is present in isolated trees in the study area. The species has not been recorded nesting within 5 miles of the study area.

<i>Scientific Name</i> Common Name	Status ^a Federal/State	Geographic Distribution	Habitat Requirements	Likelihood to Occur in the Study Area
<i>Circus cyaneus</i> Northern harrier	-/SSC	Breeding range encompasses much of lowland California; winter range expands to include the remaining lowland areas	Nests on the ground among herbaceous vegetation, such as grasses or cattails; forages in grasslands, agricultural fields, and marshes	Moderate —The study area contains suitable foraging habitat for the species but limited nesting habitat due to cultivation and the low stature of the annual grasslands in most of the study area.
<i>Athene cunicularia</i> Western burrowing owl	-/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast	Level, open, dry, heavily grazed or low-stature grassland or desert vegetation with available burrows	High —The species was observed during pre-activity surveys and monitoring in 2023. Suitable grassland foraging habitat occurs throughout the study area. Suitable nesting habitat in ground squirrel burrows is found throughout the study area; however, the low density of burrows and dense nonnative grass limits the overall suitability of the study area. Several CNDDB occurrences are present within and adjacent to the study area (CDFW 2022c).
<i>Lanius ludovicianus</i> Loggerhead shrike	-/SSC	Resident and winter visitor in lowlands and foothills throughout California; rare on coastal slope north of Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches; nests in densely foliated trees or shrubs	High (Occupied) —The species was observed in the study area during May surveys, and there is suitable nesting and foraging habitat within the study area.
<i>Agelaius tricolor</i> Tricolored blackbird	-/T	Permanent resident in the Central Valley from Butte County to Kern County that breeds in scattered coastal locations from Marin County south to San Diego County as well as Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields; habitat must be large enough to support 50 pairs, which probably require water at or near the nesting colony	Moderate —This species was not observed in the study area during May surveys. There is no suitable nesting habitat within the study area; however, suitable foraging habitat is present. There are numerous CNDDB records around San Luis Reservoir, with the closet record 1.7 miles north of the study area (CDFW 2022c).

Scientific Name Common Name	Status^a Federal/State	Geographic Distribution	Habitat Requirements	Likelihood to Occur in the Study Area
<i>Xanthocephalus</i> Yellow-headed blackbird	-/SSC (nesting)	Breeding range primarily in the Central Valley, northeastern California, and portions of Southern California; most individuals migrate south of California in winter	Nests in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds; forages along moist shorelines and in grasslands and agricultural areas	None —No suitable foraging or nesting habitat occurs within the study area. The species has not been documented within 5 miles of the study area.
Mammals				
<i>Antrozous pallidus</i> Pallid bat	-/SSC	Low elevations throughout California	Occurs in a variety of habitats from desert to coniferous forest but is most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in Northern California; prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging and uses caves, crevices, mines, and hollow trees for roosting	Low —This species may forage in the study area, but no suitable roosting habitat is present.
<i>Corynorhinus townsendii</i> Townsend’s big-eared bat	-/SSC	Throughout California, except high-elevation areas	Found in all habitats, except subalpine and alpine habitats; requires caves, mines, tunnels, buildings, or other human-made structures for roosting	Low —The study area provides suitable foraging habitat for this species; however, no old structures are located within the project study area that could provide roost habitat for the species.
<i>Lasiurus blossevillii</i> Western red bat	-/SSC	Throughout California west of the Sierra Nevada/Cascade crest and deserts	Roosting habitat includes forests and woodlands; roosts alone in the foliage of trees or shrubs and forages over a variety of habitats	Low —The study area provides suitable foraging habitat for this species, and trees within the study area may provide roost habitat; however, the species has not been documented within 5 miles of the study area.

Scientific Name Common Name	Status^a Federal/State	Geographic Distribution	Habitat Requirements	Likelihood to Occur in the Study Area
<i>Eumops perotis californicus</i> Western mastiff bat	-/SSC	Year-round range spans most of California, with records absent from the northwest and northeast portions of the state	Typically roosts in crevices in cliffs and rocky outcrops with colonies of fewer than 100 individuals but may also roost in bridges, caves, and buildings with adequate height and clearance for dropping into flight; there is at least one record of this species, which generally forages in a variety of grassland, shrub, and wooded habitats, including riparian and urban areas, roosting in an untrimmed palm tree, although most commonly found in open arid lands	Low —The study area provides suitable foraging habitat for this species; however, no cliffs, rock outcrops, or old structures are located within the project study area that could provide roost habitat for the species.
<i>Ammospermophilus nelsoni</i> Nelson’s (San Joaquin) antelope squirrel	-/T	Current range is largely restricted to western Kern County and the Carrizo and Elkhorn Plains in eastern San Luis Obispo County	Typically found in sparsely vegetated grasslands with moderate shrub cover; typically avoids steep slopes	None —The study area is north of the current known range for the species.
<i>Dipodomys ingens</i> Giant kangaroo rat	E/E	Current range confined to six major geographic units, spanning from western Fresno and San Benito Counties south to Kern County and then west to the Carrizo Plain and Cuyama Valley	Low-density annual grasslands with few or no shrubs on gentle slopes of generally less than 10% with friable sandy-loam soils; forms colonies of burrows	None —The study area is outside of the known range of the species. Currently, the site provides low-quality habitat for the species. No individuals or signs of the species, including characteristic precincts, burrows, track, scat, or “haysticks,” were observed anywhere on the site. The historic and extensive discing, plowing, planting, and mowing of the site for agriculture very likely excluded or eradicated the species if it ever did exist in the area. The dense annual grassland is also unfavorable because it impedes the species’ bipedal locomotion.

Scientific Name Common Name	Status^a Federal/State	Geographic Distribution	Habitat Requirements	Likelihood to Occur in the Study Area
<i>Dipodomys nitratoides exilis</i> Fresno kangaroo rat	E/E	Merced County south to northern Kings County	Elevated grassy patches on alkali plains or in grass terrain with scattered alkali patches on the flat valley floor of the San Joaquin Valley; found in areas with friable soils	None —The study area is outside of the known range of the species. The species is also only known from the flat valley floor; the site generally consists of rolling hills.
<i>Taxidea taxus</i> American badger	-/SSC	In California, badgers occur throughout the state, except in humid coastal forests of northwestern California in Del Norte and Humboldt Counties	Badgers occur in a wide variety of open arid habitats but are most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub; the principal habitat requirements for the species appear to be adequate food (burrowing rodents), friable soils, and relatively open, uncultivated ground	High —Suitable habitat is present throughout the study area. A potential burrow was identified directly adjacent to the study area during May 2019 surveys.
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	E/T	Occurs principally in the San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extend from Kern County north to Contra Costa County	Saltbush scrub, grassland, oak, savanna, and freshwater scrub	Moderate —Suitable habitat is present throughout the study area. Numerous recent records at and within 1 mile of the site (CDFW 2022c).

Status explanation:

Federal

- E = listed as endangered under the federal Endangered Species Act.
- T = listed as threatened under the federal Endangered Species Act.
- D = Removed from listing under the federal Endangered Species Act.
- = no listing.

State

- E = listed as endangered under the California Endangered Species Act.
- T = listed as threatened under the California Endangered Species Act.
- FP = fully protected under the California Fish and Game Code.
- SSC = species of special concern in California.
- = no listing.

<i>Scientific Name</i>	Status ^a	Geographic Distribution	Habitat Requirements	Likelihood to Occur in the Study Area
Common Name	Federal/State			
Potential Occurrence in the Study Area				
High:	Known occurrences of the species within the study area, or numerous CNDDDB records or other documents record an occurrence of the species within a 5-mile radius of the study area; suitable habitat is present within the study area.			
Moderate:	CNDDDB records, or other documents, record the species within a 5-mile radius of the study area; suitable quality habitat is present within the study area. Generally, some essential habitat component missing.			
Low:	CNDDDB records, or other documents, do not record an occurrence of the species within a 5-mile radius of the study area; suitable habitat is present within the study area.			

Survey conditions during the May 2019 field investigation of the site were mild, with temperatures ranging from 65 to 90 degrees Fahrenheit. Conditions were mild and partly sunny from May 13 to 15; rainy and overcast conditions were encountered on May 16 and 17. Survey conditions were suitable to determine habitat quality at the study area to support special-status species. Focused surveys were conducted for both California tiger salamander and Swainson's hawk to better understand breeding and occupancy at the study area (see discussion for each species below).

Aquatic surveys for California tiger salamander surveys were conducted on March 24, April 21, and May 12, 2023. Surveys followed the methodology in USFWS and CDFW's (2003) *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of California Tiger Salamander*.

Blunt-nosed Leopard Lizard

Blunt-nosed leopard lizard is State and federally listed as endangered and a California fully protected species. Blunt-nosed leopard lizard is endemic to the San Joaquin Valley and adjacent foothills. The species is known to occur on the west side of the valley from southwestern Merced County south to southern Kern County and on the east side of the valley from southwestern Tulare County to southern Kern County. Blunt-nosed leopard lizard also occurs in the eastern portions of the Coast Range foothills, including the Carrizo Plain in eastern San Luis Obispo County and the Cuyama Valley in portions of San Luis Obispo, Santa Barbara, and Ventura Counties (USFWS 2010a).

Blunt-nosed leopard lizard inhabits open, sparsely vegetated areas of low relief in nonnative annual grasslands and valley sink scrub. The lizards use small rodent burrows for shelter from predators and temperature extremes. They typically use abandoned ground squirrel burrows as well as abandoned or occupied kangaroo rat burrows. They have been found to construct shallow, simple tunnels in earth berms or under rocks in areas where there is low mammal burrow density (USFWS 2010a).

Currently, the study area would be considered low-quality habitat for blunt-nosed leopard lizard, largely due to the density of nonnative grass across the study area; poor prey base (i.e., low level of insect and *Uta* sp. abundance); lack of small mammal burrows, which blunt-nosed leopard lizard relies on for thermoregulation and escape from predation; and lack of minimally vegetated washes and intermittent streams. Historic plowing, discing, planting, and mowing of the land is also likely to have excluded blunt-nosed leopard lizard. The potential blue-line features observed in the study area were grown over with thick grasses that would inhibit movement of blunt-nosed leopard lizard. No blunt-nosed leopard lizards were observed during the May 2019 surveys. There are no recent records for blunt-nosed leopard lizards in the CNDDDB. The closest CNDDDB location to the study area partially overlaps the northwest corner of the project site, but the record is from 1931 and broadly mapped to an area with a radius of 1 mile (Occurrence No. 117) (CDFW 2022c). The next-closest CNDDDB location, from the 1970s (specific year is not available), is 0.75 mile south of the study area at the junction of Billy Wright Road and Jasper Sears Road (Occurrence No. 324, 1970s) (CDFW 2022c). There are no additional records for this species within 5 miles of the project site.

Blainville's Horned Lizard

Blainville's horned lizard is a California species of special concern. Although fragmented, its range generally extends along the Pacific Coast from the Baja California border west of the deserts and the Sierra Nevada, north to the Bay Area, and inland as far north as Shasta Reservoir. It also occurs on the Kern Plateau east of the crest of the Sierra Nevada (CaliforniaHerps.com 2023). The species occurs between sea level and an elevation of 8,000 feet (Stebbins 2003).

Blainville's horned lizard occupies a variety of habitats, including areas with an exposed gravelly sandy substrate that supports scattered shrubs, chamise chaparral, annual grassland (Jennings and Hayes 1994), broadleaf woodland, and conifer forest (Stebbins 2003). The species is most common in lowlands along sandy washes with scattered shrubs for cover. Habitat requirements include open areas for basking; patches of fine, loose soil where it can bury itself; and ants and other insect prey (Stebbins 2003). For extended periods of inactivity or hibernation, horned lizards occupy small mammal burrows or burrow into loose soils under surface objects (Zeiner et al. 1988). Blainville's horned lizards have been observed to be active between April and October, and hatchlings first appear in July and August (Jennings and Hayes 1994).

Annual grassland in the study area provides suitable habitat for Blainville's horned lizard where substrate conditions exist (i.e., friable soils and rocky areas). However, the dense nonnative grasses that cover the study area may limit the overall suitability for horned lizards.

There are no CNDDDB records for Blainville's horned lizard within 5 miles of the study area (CDFW 2022c). Based on the range of the species and the extent of suitable habitat in the study area, the potential for horned lizards to occur in the study area is considered low.

San Joaquin Coachwhip

San Joaquin coachwhip is one of six subspecies of whipsnake that has a known range that extends from Colusa County in the Sacramento Valley, south to the Grapevine in Kern County in the San Joaquin Valley, and west to the inner southern Coast Ranges. An isolated population occurs in the Sutter Buttes. The taxon is known to occur from 65 to 2,950 feet above sea level. San Joaquin whipsnake lives in open, dry vegetative associations with little or no tree cover. In the western San Joaquin Valley, this whipsnake inhabits grassland and saltbush scrub associations. It is known to climb bushes such as saltbush to view prey and predators. Mammal burrows are used by San Joaquin coachwhip for refuge and oviposition sites. Whipsnake subspecies will not emerge from burrows until near-surface temperatures reach 28 degrees Celsius on either a daily or seasonal basis. For that reason, emergence tends to be late in the season (April to early May) and late in the morning (10:00 to 11:00 a.m.), although younger individuals may emerge earlier in the day. The subspecies eats primarily lizards and robs nests of birds and mammals; it may also eat carrion (Jennings and Hayes 1994).

Annual grassland in the study area provides suitable habitat for San Joaquin coachwhip where substrate conditions exist (i.e., small mammal burrows). The dense nonnative grasses that cover the study area may limit overall suitability for coachwhips. There are four CNDDDB records for the coachwhip within 5 miles of the study area (Occurrence No. 9, 1985; Occurrence No. 11, 1985; Occurrence No. 13, 1985; Occurrence No. 19, 1985) (CDFW 2022c). All of the records are in the vicinity of Los Banos Reservoir in grazed nonnative grasslands. Based on the CNDDDB records near the study area and the extent of suitable habitat in the study area, the potential for the coachwhip to occur in the study area is moderate.

Bald Eagle

Bald eagle is a State-listed endangered species and protected by the MBTA, the BGEPA, and several sections of the California Fish and Game Code.

Bald eagle occurs throughout most of North America. It breeds from the Aleutian Islands and Alaska in the north, east through Canada to Labrador, and south to Florida as well as Baja California and other scattered locations in northern Mexico (64 FR 128; Buehler 2000). In the contiguous United States, bald eagle breeding distribution is concentrated in the Cascade Range of Washington, Oregon, and Northern California; the Rocky Mountains; the Great Lakes region; Maine; the Atlantic Coast; Florida; the Gulf Coast in Louisiana and Texas; and central Arizona (Buehler 2000). The species' winter range includes the coastal portion of Alaska and Canada, southern Canada, and nearly the entire continental United States.

Bald eagle breeds or winters throughout California, except in the desert areas (Zeiner et al. 1990a). Most breeding activity in California occurs in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity Counties (Zeiner et al. 1990a). California's breeding population of bald eagle is resident year-long in most areas where the climate is relatively mild (Jurek 1988). Bald eagle nests in only a few scattered locations south of the northern Sacramento Valley.

Currently, the study area is considered moderate-quality habitat for bald eagle. It is located in proximity to San Luis Reservoir and O'Neill Forebay to the north and Los Banos Reservoir to the south, all of which provide suitable nesting and foraging habitat for bald eagles. In addition, the study area provides suitable winter foraging habitat for this species. Suitable nesting habitat is present within scattered trees throughout the study area. There are no CNDDDB records for this species within 5 miles of the study area (CDFW 2022c), and no bald eagles were observed during surveys. Based on the suitable nesting and foraging habitat in and within the vicinity of the study area, the potential for this species to occur is moderate.

Golden Eagle

Golden eagle is fully protected under the California Fish and Game Code. It is also protected by the MBTA and the BGEPA.

Golden eagle is a year-round resident throughout much of California. The species does not breed in the center of the Central Valley but breeds in much of the rest of the state. Golden eagles typically occur in rolling foothills, mountain areas, sage-juniper flats, and deserts (Zeiner et al. 1990a). In California, golden eagles nest primarily in open grasslands and oak (*Quercus* spp.) savanna but also nest in oak woodland and open shrublands. Golden eagles forage in open grassland habitats (Kochert et al. 2002). Preferred territories include those that have a favorable nest site, a dependable food supply (i.e., medium to large mammals and birds), and broad expanses of open country for foraging. Hilly or mountainous country where takeoff and soaring are supported by updrafts is generally preferred to flat habitats (Johnsgard 1990). In the interior central Coast Ranges of California, golden eagles favor open grasslands and oak savanna, with lesser numbers in oak woodland and open shrublands. In the Diablo Range of California, all except a few pairs nest in trees in oak woodland and oak savanna habitats because of a lack of suitable rock outcrops or cliffs. The tree species for nesting include several oak species, foothill pine (*Pinus sabiniana* and *P. coulteri*), California bay laurel (*Umbellularia californica*), eucalyptus (*Eucalyptus* spp.), and western sycamore (*Platanus racemosa*).

The study area is considered high-quality habitat for golden eagle. Annual grassland in the study area is populated with small rodents (e.g., voles and mice) that provide abundant prey for raptors, including golden eagle. Suitable nesting habitat is present within scattered trees throughout the

study area. The closest CNDDDB record for this species is approximately 1.8 mile east of the study area (Occurrence No. 120, 1987) (CDFW 2022c). A nesting site was indicated in this record. No golden eagles were observed during surveys. Based on the presence of suitable nest trees and the foraging habitat found within the vicinity of the study area, the potential for this species to occur within the study area is high.

Swainson's Hawk

Swainson's hawk is a State-listed threatened species. It forages in grasslands, grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Vineyards, orchards, and rice and cotton fields are generally unsuitable for foraging because of the density of the vegetation (CDFG 1994). The majority of Swainson's hawks winter in South America, although some winter in the United States. Swainson's hawks arrive in California from early March to early April to establish nesting territories and breed (Estep 2008). The species tends to nest in large trees, typically along strips of wooded riparian vegetation, but also in roadside trees, tree rows or isolated trees in fields, or along field borders, small groves, farmyards, or rural residential areas (Estep 2008). Foraging takes place over open country, historically grassland. Today, Swainson's hawk forages mostly over agricultural lands, including alfalfa fields, fallow fields, some row crops, pastures, and grain crops (CDFG 1994).

Currently, the study area is considered high-quality habitat for Swainson's hawk. Two active Swainson's hawk nests were observed within the project boundary, and three active nests were observed within the 0.5-mile surrounding survey area (Figure 3.4-3) during surveys in March and April of 2022. In addition, there are several CNDDDB records of nesting Swainson's hawks within 5 miles of the study area (Figure 3.4-2). The study area provides high-quality habitat because of the prey base in the general vicinity as well as the suitable nest trees and structures (e.g., lattice towers) throughout the site and on adjacent lands.

White-tailed Kite

White-tailed kite is a fully protected species under the California Fish and Game Code. The species occurs throughout California in coastal and valley lowlands (Zeiner et al. 1990a)—specifically, in low-elevation open grasslands, savannah-like habitats, agricultural areas, wetlands, and oak woodlands (Dunk 1995). Pasture and hay crops, compatible row and grain crops, and natural vegetation such as seasonal wetlands and annual grasslands provide foraging habitat for this species (Erichsen 1995). Kites nest in dense oak, willow, or other tree stands near open foraging areas. The breeding season lasts from February to October and peaks from May to August (Zeiner et al. 1990a).

Suitable nesting habitat for white-tailed kite in the study area is limited to scattered trees and transmission towers. Annual grassland in the study area is populated with small rodents (e.g., voles and mice) that provide abundant prey for raptors, including white-tailed kite. There are no CNDDDB records for white-tailed kites within 5 miles of the study area (CDFW 2022c). Based on the availability of nest sites and potential foraging habitat throughout the site, the potential for white-tailed kite to nest in the study area is considered moderate.

Northern Harrier

Northern harrier is a California species of special concern and a year-round resident throughout the Central Valley. It is often associated with open grassland habitats and agricultural fields. Nests are found on the ground in shrubby or tall vegetation, usually at the edge of a marsh. Northern harrier nests from April to September, with peak activity in June and July. Harriers prey on small mammals, birds, and small reptiles in open grasslands, meadows, and emergent wetlands (Zeiner et al. 1990a).

The study area provides moderate-quality habitat for northern harrier. Suitable nesting habitat is limited to the scattered trees throughout the study area. Annual grassland within the study area is populated with small rodents (e.g., voles and mice) that provide abundant prey for raptors, including northern harrier. The closest CNDDDB record is for an occurrence approximately 1.7 miles north of the study area at O'Neill Forebay (Occurrence No. 41, 2001) (CDFW 2022c). Other records for this species are within 5 miles of the study area. Based on these factors, the potential for northern harrier to occur in the study area is moderate.

Western Burrowing Owl

Western burrowing owl is a California species of special concern. Western burrowing owl is a year-round resident in the Central Valley, San Francisco Bay Area, Carrizo Plain, and Imperial Valley. The species occurs primarily in grassland habitats but may also occur in landscapes that are highly altered by human activity. Suitable habitat must contain burrows with relatively short vegetation and minimal amounts of shrubs or taller vegetation. Western burrowing owl may also occur in agricultural areas along roads, canals, ditches, and drains. The owls commonly nest and roost in California ground squirrel burrows but may also use burrows dug by other species. They also nest in culverts, concrete rubble, and pipes. The breeding season is March to August but can begin as early as February. During the breeding season, owls typically forage near their burrows but have been recorded hunting up to 1.7 miles away. Rodent populations, particularly California vole populations, may greatly influence the survival and reproductive success of California burrowing owls (Shuford and Gardali 2008).

Currently, the study area provides moderate-quality habitat for burrowing owl because of the general low density of California ground squirrel burrows and tall, dense nonnative grasses. One burrowing owl was observed at the project site in 2023 during pre-activity surveys and biological monitoring associated with the geo-technical surveys. CNDDDB records indicate that two individuals were located in the study area (Figure 3.4-2) (Occurrence No. 197, 1993; Occurrence No. 477, 2002) (CDFW 2022c). The burrowing owl observation locations were inspected during the May 2019 field surveys, but no burrows or signs of the species were present. Based on the recent documented occurrence, the potential for western burrowing owl to occur in the study area is high.

Loggerhead Shrike

Loggerhead shrike is a California species of special concern. In California, the range of loggerhead shrike extends throughout most of the state, except for the heavily forested areas of the coastal slope, Coast Ranges, Klamath and Siskiyou Mountains, Sierra Nevada, southern Cascades, and upper elevations of the Transverse Ranges. Loggerhead shrikes breed in shrublands and open woodlands with grass cover and bare ground. They search for prey from tall shrubs, trees, fences, and power lines and frequently impale their prey on sharp, thorny, or multi-stemmed plants and barbed-wire fences. Loggerhead shrikes forage in open areas with short grasses and forbs or bare ground. Nests are built in trees or shrubs with dense foliage and usually well hidden (Shuford and Gardali 2008). The nesting period for loggerhead shrikes is March through June (Zeiner et al. 1990a).

Loggerhead shrikes were observed during surveys conducted in May 2019. Nesting habitat is limited to scattered trees in the study area. Locally nesting loggerhead shrikes could forage in grassland habitat throughout the study area. Based on the presence of suitable habitat in the study area and known occupancy, the potential for loggerhead shrikes to occur is considered to be high.

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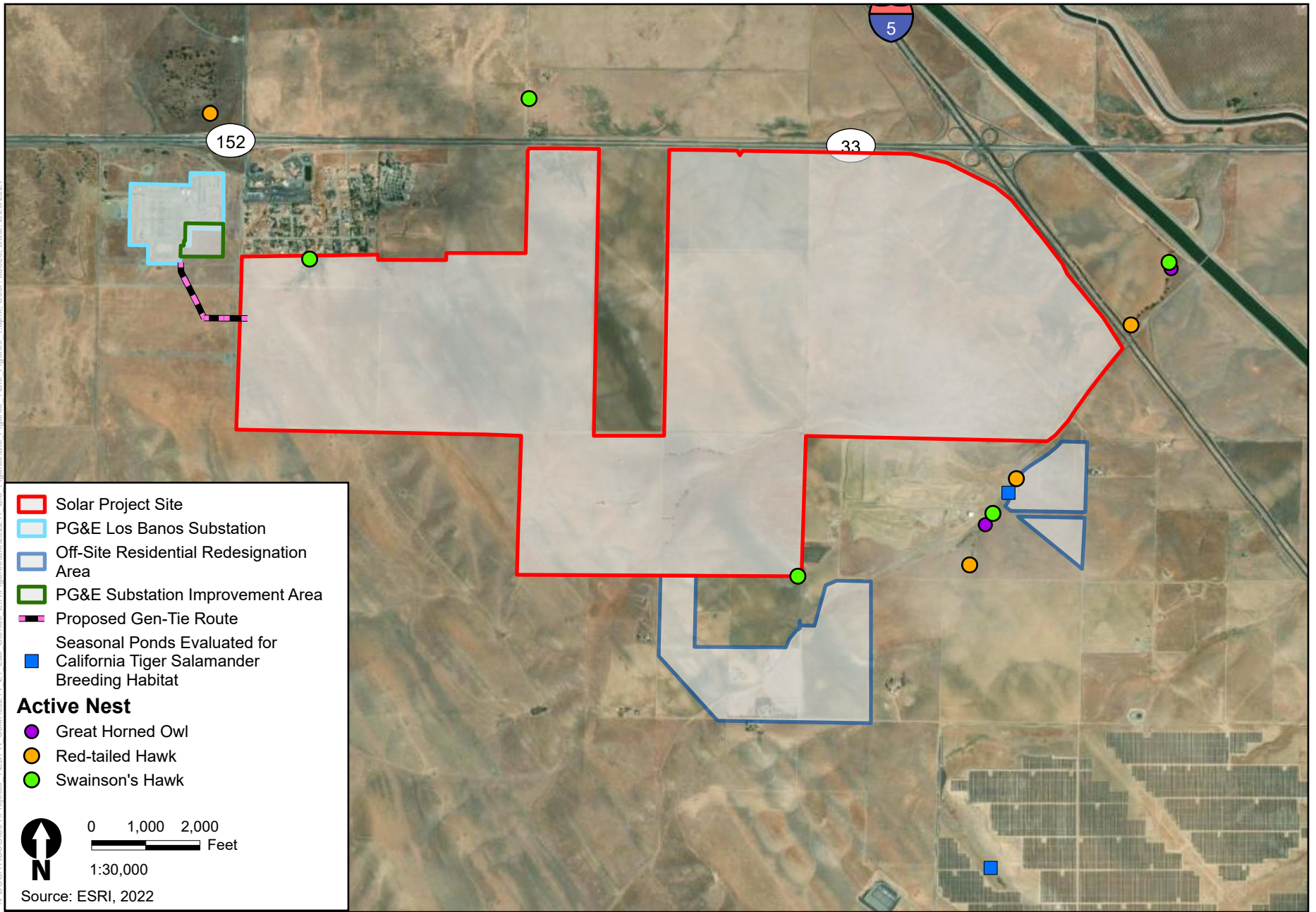


Figure 3.4-3
Wildlife Survey Results

Tricolored Blackbird

Tricolored blackbird is a California species of special concern. It is a highly colonial species that is largely endemic to California. Tricolored blackbird breeding colony sites require open, accessible water; a protected nesting substrate, including either flooded, thorny, or spiny vegetation; and suitable foraging habitat that provides adequate insect prey within a few miles of the nesting colony. Tricolored blackbird breeding colonies occur in freshwater marshes dominated by tules and cattails, in Himalayan blackberries (*Rubus armeniacus*), and in silage and grain fields (Beedy and Hamilton 1997). The breeding season is from late February to early August (Shuford and Gardali 2008). Tricolored blackbird foraging habitats in all seasons include annual grasslands; dry seasonal pools; agricultural fields, such as large tracts of alfalfa with continuous mowing schedules and recently tilled fields; cattle feedlots; and dairies. They also forage occasionally in riparian scrub habitats and along marsh borders. Weed-free row crops and intensively managed vineyards and orchards are not used as regular foraging sites. Most tricolored blackbirds forage within 3 miles of their colony sites but travel distances of up to 8 miles have been reported (Beedy and Hamilton 1997).

Perennial wetland drainage habitat, one of the preferred nesting areas for this species, is lacking in the study area. Grasslands throughout the study area provide suitable foraging areas. The closest CNDDDB nesting records for tricolored blackbird are located at O'Neill Forebay, 2.1 miles northwest of the study area (Figure 3.4-2) (Occurrence No. 241, 2007) (CDFW 2022c). Based on the presence of suitable foraging habitat in the study area and known occupancy in the vicinity, the potential for tricolored blackbirds to occur is considered to be moderate.

Western Red Bat

Western red bat is a California species of special concern and considered a high-priority species in California by the Western Bat Working Group (2005). Western red bat occurs throughout California west of the Sierra Nevada and Cascade crest and in deserts. The winter range includes western lowlands and coastal regions south of San Francisco. Roosting habitat includes forests and woodlands from sea level up to the mixed conifers in the Sierras. Western red bats forage over a wide variety of habitats. Day roost sites are often in edge habitats adjacent to streams, fields, or urban areas. They typically roost alone in the foliage of trees or shrubs (Western Bat Working Group 2005).

The study area is within the range of the western red bat and provides suitable foraging habitat. The scattered eucalyptus trees found throughout the study area provide suitable roosting habitat. However, there are no CNDDDB records for this species within 5 miles of the study area (CDFW 2022c). Therefore, the potential for western red bat to occur in the study area is considered to be low.

American Badger

American badger is a California species of special concern. American badgers occur throughout the state, except in the humid coastal forests of northwestern California in Del Norte and Humboldt Counties. American badgers occur in a wide variety of open, arid habitats but are most commonly associated with grasslands, savannas, and mountain meadows. They require adequate food (e.g., burrowing rodents), friable soils, and relatively open, uncultivated ground (Williams 1986). Badgers dig burrows that are used for cover and reproduction (Zeiner et al. 1990b).

Grasslands throughout the study area provide suitable habitat for American badger. California ground squirrels, which are present throughout the site, provide suitable foraging habitat for this species. A potential badger den was located just outside the western border of the study area during the May 2019 surveys. The CNDDDB lists seven occurrences within 5 miles of the study area (Figure 3.4-2) (Occurrence No. 344, 2009; Occurrence No. 480, 2009; Occurrence No. 481, 2009; Occurrence No. 482, 2009; Occurrence No. 483, 2005; Occurrence No. 484, 2005; Occurrence No. 485, 2006) (CDFW 2022c). Based on the presence of suitable habitat in the study area and known occupancy in the project vicinity, the potential for badgers to occur is considered to be high.

San Joaquin Kit Fox

San Joaquin kit fox is a federally endangered species and State-listed threatened species. The species occurred historically in alkali scrub as well as the shrub and arid grasslands throughout the level terrain on the San Joaquin Valley floor, from southern Kern County north to Tracy in San Joaquin County and up into the more gradual slopes of the surrounding foothills and adjoining valleys of the interior Coast Ranges. Kit foxes typically den in relatively flat terrain or gently sloping hills, washes, drainages, or roadside berms. Occupied habitats are usually associated with loose-textured soils, which facilitate den construction. Shallow soils with proximity to bedrock, soils with high water tables, and impenetrable hardpan layers are generally avoided. Kit foxes will also modify burrows dug by other animals, such as California ground squirrel (USFWS 2010b).

San Joaquin kit fox is primarily nocturnal. Its prey consists largely of nocturnal species such as kangaroo rats (*Dipodomys* spp.), pocket mice (*Perognathus* spp.), and white-footed mice (*Peromyscus* spp.) (USFWS 2010b). In natural areas, kit fox density and population stability are highest in areas with abundant kangaroo rats (USFWS 2010b). In the northern portions of its range, San Joaquin kit fox consumes California ground squirrels, rabbits (*Sylvilagus* spp.), hares (*Lepus* spp.), and insects (USFWS 1998, 2010b).

The entire study area is within the historic and known current range of San Joaquin kit fox. Eighteen CNDDDB records of kit fox are located within 5 miles of the study area.

In 2004, an ICF biologist recorded a natal den in western Merced County, approximately 4 miles west of the project site near the intersection of Billy Wright Road and Jasper Sears Road. One adult and two pups were observed. On October 7, 2013, ICF biologists conducted spotlight surveys of the proposed Wright Solar Park mitigation site, approximately 1 mile south of the solar project site. The biologists observed one San Joaquin kit fox on each of the evenings when surveys occurred.

From 2005 to 2007, biologists from California State University, Stanislaus' Endangered Species Recovery Program (ESRP) conducted extensive San Joaquin kit fox surveys in western Merced County to determine abundance and distribution. Survey methods included remote camera stations, track stations, spotlight surveys, and opportunistic observations. The ESRP also assessed the habitat suitability of accessible areas in western Merced County and conducted a least-cost path modeling exercise to identify potential movement corridors in western Merced County (Constable et al. 2009). Approximately 2.2 miles south of the study area, the ESRP observed kit foxes on two occasions along Billy Wright Road (Figure 3.4-2) The ESRP also made additional kit fox observations in the Panoche Valley during the surveys. Based on the results of the surveys, the ESRP concluded that kit fox populations are not homogeneously distributed throughout western Merced County. Consistent detections in southwestern Merced County (south of SR 152) suggest a resident population may be present. The infrequent and more scattered detections in northwestern Merced County (north of SR 152) suggest that kit foxes may be transient in this area. There have been no kit foxes detected north of SR 152 in nearly two decades (Cypher pers. comm.).

Based on the data, the area south of Santa Nella (south of SR 152 and west of I-5) supports the most northerly self-sustaining kit fox population known. Protecting and managing habitat in western Merced County and the movement corridors connecting this population and the core population in Panoche Valley should be among the highest-priority tasks for any kit fox conservation strategy to enhance the long-term viability of populations present in western Merced County (Constable et al. 2009). Thus, conserving habitat south of Santa Nella would help to perpetuate populations of kit foxes in western Merced County. In addition, the ESRP assessed the distribution of suitable habitat for San Joaquin kit fox in the area that was identified as the species' range in the 1998 Recovery Plan (Cypher et al. 2013). The areas in western Merced County with natural vegetation near the study area have been ranked as having medium to high suitability for San Joaquin kit fox. The areas of the study area itself that have been and continue to be dryland farmed were ranked as having low suitability for San Joaquin kit fox. The ESRP found that habitat suitability is a significant factor in the distribution and abundance of San Joaquin kit foxes in western Merced County. The areas of western Merced County where kit fox have been and continue to be observed are those with gentle terrain, a lower density of herbaceous ground cover, and greater abundance of kangaroo rats. For kit foxes to persist in western Merced County, there must also be good connectivity with core populations of San Joaquin kit foxes in Panoche Valley.

Considering that grain crops provide low-quality habitat, the dry-farmed portions of the study area provide no habitat to low-quality habitat for San Joaquin kit fox (Cypher et al. 2013). The annual grassland within the study area provides moderate-quality habitat for kit fox, considering the past disturbance from farming activities across most of the study area (i.e., past disking activities have reduced prey base).

The study area is considered moderate-quality habitat for San Joaquin kit fox. The lack of a prey base, other than California ground squirrels, and presence of thick, tall annual grasses may reduce the quality of the habitat compared to other occupied habitat for kit fox. Kit foxes prey primarily on kangaroo rats; in the absence of kangaroo rats, they typically prey on California ground squirrel or Audubon's cottontail. California ground squirrel is also important to San Joaquin kit fox for denning habitat because kit foxes frequently widen and modify ground squirrel burrows to create dens. No evidence of kangaroo rats was observed at the study area during the May 2019 surveys, and the areas occupied by California ground squirrel were, overall, limited.

The mitigation site is predominantly low- to moderate-quality habitat (1,250 acres). However, there are areas of habitat with higher suitability throughout (202.8 acres) the mitigation site (Figure 3.4-4). The mitigation site is also considered movement habitat as a least-cost path corridor between Salt Creek, south of the Los Banos Reservoir to the Simon-Newman Ranch, north of the permit area.

Crotch's Bumblebee

Crotch's bumble bee (*Bombus crotchii*) was originally advanced to candidacy by the Fish and Game Commission in June 2019. However, the candidacy determination was challenged in court; therefore, candidacy was put on hold during the original evaluation for this project. Candidacy was reinstated on September 30, 2022, and is therefore now included in the special-status evaluation.

Crotch's bumblebee is found in open grassland and scrub habitats. It nests underground in abandoned rodent burrows. Colonies are annual; only newly mated queens overwinter. The queens emerge from hibernation in early spring to search for nest sites. Host plants, for food, include milkweed (*Asclepias* sp.), pincushion (*Chaenactis* sp.), lupine (*Lupinus* sp.), bur clover (*Medicago* sp.),

phacelia (*Phacelia* sp.), and sage (*Salvia* sp.). The study area provides marginal habitat for this species. Although there is an abundance of open grassland habitat, it appears to lack the necessary host plant species; if these species are present, they are very few in number. There are no CNDDDB records for this species within 5 miles of the study areas (CDFW 2023). However, given the marginal habitat within the study area, this species has low potential for occurrence.

Non-Special-Status Migratory Birds and Raptors

Ground-nesting migratory birds and raptors have the potential to nest and forage in the study area. Tree- and shrub-nesting habitat in the study area is limited; however, electrical towers may provide atypical nesting habitat for migratory birds and raptors. The breeding season for migratory birds and raptors generally extends from February through August, although nesting periods vary by species. A great horned owl (*Bubo virginianus*) was identified nesting in a eucalyptus tree in the study area during the May 2019 surveys, and one great horned owl and two red-tailed hawk nests were found adjacent to the solar project and off-site residential redesignation sites during the 2022 surveys (Figure 3.4-3).

Tule Elk

Tule elk (*Cervus canadensis nannodes*) are a high-profile species in California and a CDFW harvest species. This species has been reintroduced by CDFW throughout many portions of its former range after the population of this elk subspecies was almost extirpated from California by the early 1900s. Single or small groups of two or three female tule elk were observed scattered throughout the study area during the 2019 survey, and several young calves were also observed during the survey. Larger groups of tule elk were observed in and around San Luis Reservoir to the north.

Mountain Lion

Mountain lion (*Puma concolor*) are classified as a specially protected non-game species in California following the passage of the California Wildlife Protection Act of 1990. Mountain lions inhabit diverse habitat types across California including temperate redwood forest, coniferous/deciduous forest, coastal chaparral, foothills, and mountains. They are found wherever native or introduced ungulates such as mule deer, elk, bighorn sheep, or feral hogs are present.

3.4.2 Environmental Impacts

This section describes the proposed project's potential impacts on biological resources. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

Methods for Analysis

Background Search

The sources of information listed below were reviewed to identify special-status species potentially occurring at the project site.

- CDFW's CNDDDB for records of the Charleston School, Howard Ranch, Ingomar, Los Banos, Los Banos Valley, Ortigalita Peak NW, San Luis Dam, and Volta USGS 7.5-minute topographic quadrangles (CDFW 2022b).

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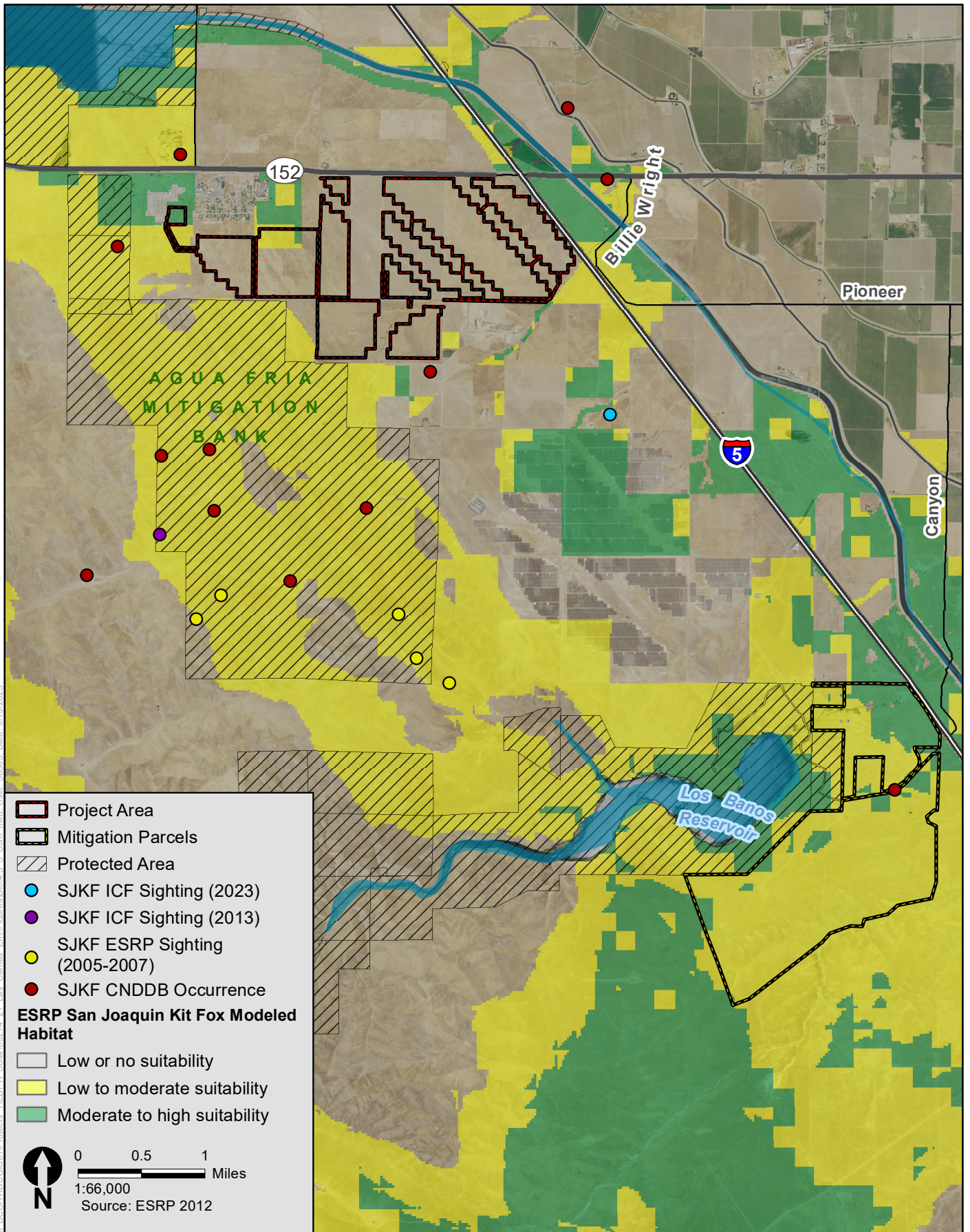


Figure 3.4-4
San Joaquin Kit Fox Habitat and Occurrences

- USFWS Information Planning and Consultation “trust resource” report for a list of species at the project site (USFWS 2023).
- Draft and final versions of the EIR for the Wright Solar Park conditional use permit application, CUP12-017 (County of Merced 2014a and 2014b).

ICF also reviewed aerial photographs of the project site using Google Earth Pro (Google 2020) to obtain information on historical habitat conditions.

Field Surveys

Field surveys conducted for biological resources consisted of a delineation of aquatic resources and a habitat assessment for special-status plant and wildlife species. Each of these surveys is described below.

Aquatic Resource Delineation

ICF botanists and wetland ecologists conducted aquatic resource mapping within the solar project site from May 13 to 16, 2019, to determine the presence and extent of wetland and non-wetland waters of the United States. Aquatic resource delineation fieldwork within the solar project site was conducted on April 25, 2022, by an ICF biologist and botanist. In addition, on November 10, 2022, an ICF biologist conducted an aquatic resource delineation within the PG&E substation improvements area and on the alignment of the proposed gen-tie line.

The regulation defining the extent of waters of the United States has changed a number of times since enactment of the CWA. On January 18, 2023, EPA and USACE published a final rule in the *Federal Register* (FR 2022–28595) with a revised definition of waters of the United States, effective March 20, 2023. This rule replaced the pre-2015 definition of waters of the United States, which had recently been in effect, starting on September 2, 2021. The 2023 rule establishes the scope of USACE and EPA authority under the CWA and includes five categories of jurisdictional waters of the United States in paragraph (a) and eight categories of exclusions or non-jurisdictional aquatic features in paragraph (b).

Paragraph a of the 2023 rule defines waters of the United States for the purposes of the CWA as:

- (1) Traditional navigable waters, territorial seas, and interstate waters;
- (2) Impoundments of waters of the United States;
- (3) Tributaries of traditional navigable waters, territorial seas, interstate waters, or paragraph (a)(2) impoundments when the tributaries meet either the relatively permanent standard or the significant nexus standard;
- (4) Jurisdictional adjacent wetlands: (1) wetlands adjacent to traditional navigable waters, territorial seas, or interstate waters; (2) wetlands adjacent to and with a continuous surface connection to relatively permanent paragraph (a)(2) impoundments or jurisdictional tributaries when the jurisdictional tributaries meet the relatively permanent standard; or (3) wetlands adjacent to paragraph (a)(2) impoundments or jurisdictional tributaries when the wetlands meet the significant nexus standard; and
- (5) Intrastate lakes and ponds, streams, or wetlands not identified in paragraphs (a)(1) through (4), above, that meet either the relatively permanent standard or the significant nexus standard.

The categories for the exclusions, or non-jurisdictional aquatic features, are listed in paragraph (b) of the new rule. Under this rule, when a feature satisfies the terms of an exclusion, it is excluded from jurisdiction, even when the feature would otherwise be jurisdictional under paragraphs (a)(2) through (5) of this rule. Paragraph (a)(1) waters are not subject to the exclusions. The exclusions, or non-jurisdictional waters, include:

- (1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the CWA;
- (2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with EPA;
- (3) Ditches (including roadside ditches) excavated in and draining only dry land that do not carry a relatively permanent flow of water;
- (4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;
- (5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water used exclusively for such purposes as stock watering, irrigation, or rice growing;
- (6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;
- (7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel, unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and
- (8) Swales and erosional features (e.g., gullies, small washes) characterized by low volumes and infrequent or short-duration flows.

On May 25, 2023, the Supreme Court issued its decision in *Sackett v. EPA*, adopting a new definition for waters of the United States. The court's holding is summarized as follows:

- "Waters" encompasses only those relatively permanent, standing, or continuously flowing bodies of water forming geographical features that are described in ordinary parlance as streams, oceans, rivers, and lakes;
- To qualify as waters of the United States, waters must also be connected to traditional navigable waters;
- The CWA extends only to those wetlands that are, as a practical matter, indistinguishable from waters of the United States, meaning that the wetland has a continuous surface connection with that water, making it difficult to determine where the water ends and the wetland begins; and
- The significant nexus test is no longer applicable.

Consistent with the court's decision in *Sackett*, this report focuses on whether aquatic features at the project site are relatively permanent and adequately connected to traditional navigable waters.

The delineation was conducted in accordance with guidance provided in the 1987 *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual for the Arid West Region* (USACE 2008), and 33

CFR 328.3(e) and 329.11(a)(1). The ordinary high-water mark was identified according to USACE's Regulatory Guidance Letter No. 05-05 and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States, A Delineation Manual* (USACE 2005; Lichvar and McColley 2008).

Special-Status Plants – Botanical Surveys

ICF conducted botanical surveys within the solar project site from May 13 to 16, 2019, to identify special-status plants. In addition, an ICF biologist conducted a botanical survey within the PG&E substation improvements area on November 10, 2022. The botanical surveys followed the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (California Department of Fish and Game 2009). This currently accepted protocol outlines the requirements for conducting surveys for special-status plants. The surveys focused on determining the presence of special-status plant species in the project region that were evident and identifiable at the time of the survey and evaluating vegetation communities for their suitability with respect to supporting species that were not identifiable at the time of the survey (Table 3.4-3).

Special-Status Wildlife – Habitat Assessment and Species Surveys

ICF biologists conducted habitat assessment surveys from May 13 to 16, 2019. The surveys focused on evaluating vegetation communities within and adjacent to the project site for their suitability with respect to supporting special-status wildlife species with potential to occur in the project region (Table 3.4-4). The areas of special-status habitat assessment consisted of the solar project site, its perimeter, and all accessible areas within 500 feet of the site. General conditions on the site were recorded, and habitats that could support special-status species were mapped. During the assessment, the site was surveyed by the biologists on foot by walking meandering transects that were spaced approximately 100 to 300 feet apart. Access roads throughout the site were assessed with use of a vehicle. Inaccessible areas (i.e., neighboring private properties) were assessed using binoculars.

ICF conducted a formal site assessment for California red-legged frog and California tiger salamander on the project site in 2019 (Figure 3.4-5). The California tiger salamander site assessment was updated in 2022 (Appendix 3.4-4). Aquatic surveys within the assessment area were conducted in the spring of 2023. The site assessments and spring 2023 surveys were conducted in accordance with the USFWS (2005) *Revised Guidance on Site Assessment and Field Surveys for the California Red-legged Frog* and the USFWS and CDFG (subsequently changed to CDFW) (2003) *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander*.

Surveys for Swainson's hawks were conducted between March 22 and April 20, 2022, and followed the 2000 Swainson's Hawk Technical Advisory Committee's *Recommended Timing and Methodology for Swainson's Hawks Nesting Surveys in California's Central Valley*. ICF wildlife biologists conducted surveys from a vehicle and on foot between 0700 and 1000 during the first survey period (March 20 to April 5) and between 0830 and 1200 during the second survey period (April 5 to April 20). A total of six surveys were conducted.

All wildlife species observed and potential wildlife habitats (e.g., Swainson's hawk nest trees, large burrows, burrow complexes, large nests, aquatic features, rocky outcrops) were recorded during the survey using the iPad Collector application.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the project would have a significant effect if it would result in any of the conditions listed below.

Would the project:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS?
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS?
- Have a substantial adverse effect on State- or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal areas, etc.) through direct removal, filling, hydrological interruption, or other means?
- 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?
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Conflict with the provisions of an adopted HCP, natural community conservation plan, or other approved local, regional, or State HCP?

Impacts Not Evaluated in Detail

Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS.

No riparian habitat or other sensitive natural communities identified in local or regional plans, policies, regulations or by CDFW or USFWS are present within the project site. The project would result in *no impact*; therefore, this impact is not evaluated further.

Impacts and Mitigation Measures

Impacts on biological resources are categorized as either direct or indirect. They can be further grouped into either temporary or permanent categories. Direct impacts are those that are caused directly by project construction, operation, and decommissioning activities, even if it takes time for the resulting effect to develop. Indirect impacts are those that occur either later in time or at a distance from the project location but are reasonably foreseeable, such as a conversion of uplands to wetlands from a diversion of wash water into the adjacent habitat. Impacts on biological resources are generally considered temporary when their habitat is restored to preconstruction conditions within 1 year of disturbance. If the habitat is not restored to preconstruction conditions within this 1-year time frame, the impacts are considered permanent, even if the project is later decommissioned.

The activities listed below could have direct effects on biological resources.

- Preparation of solar panel areas for installation, including vegetation clearing, grading, cut and fill.
- Tree trimming and removal.
- Excavation/trenching for cable and fiberoptic lines.

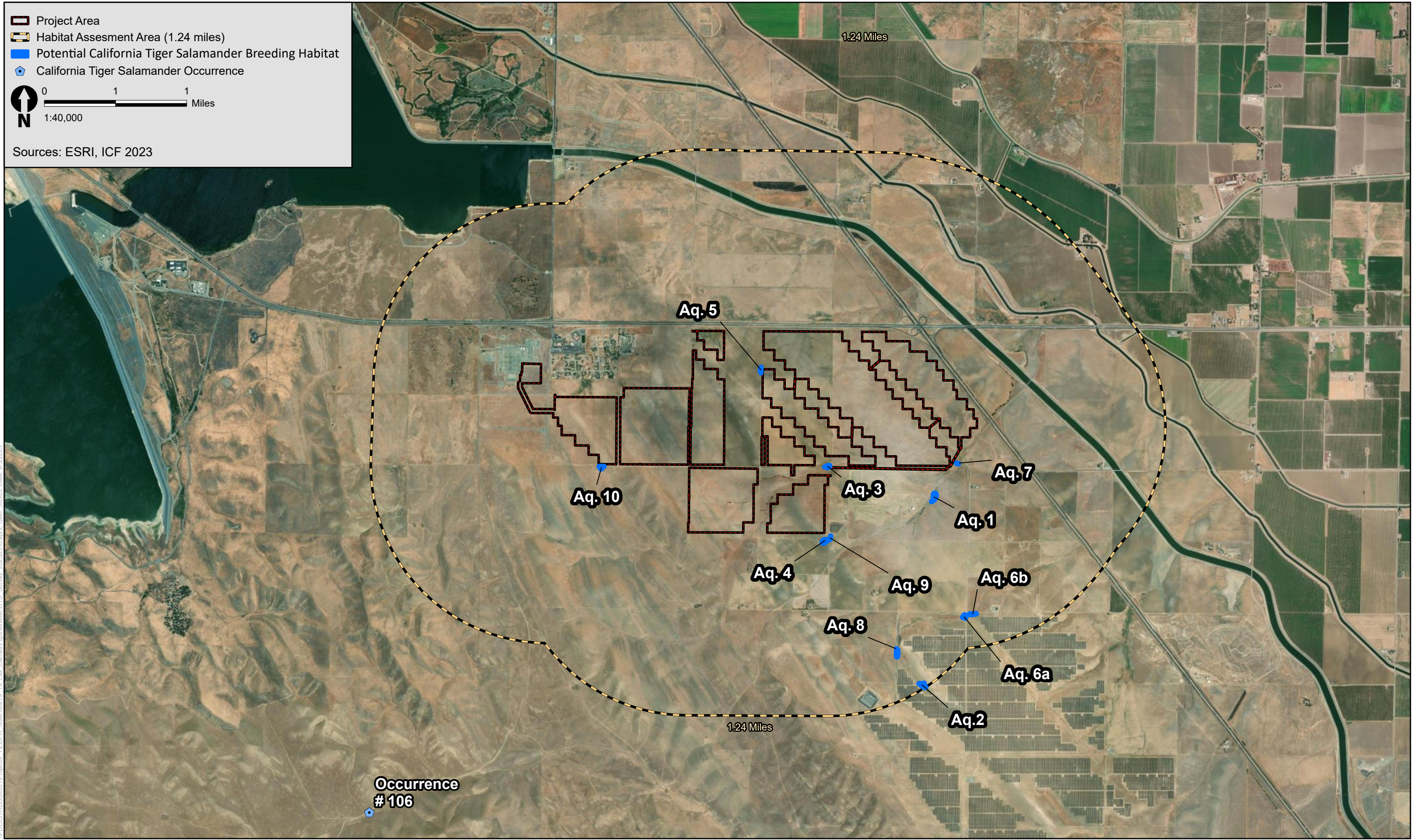


Figure 3.4-5
California Tiger Salamander Occurrence Records and Potential Aquatic Breeding Habitat Within 1.24 Mile of the Solar Project Site

- Construction of piers and building foundations.
- Construction of new dirt or gravel roads and improvement of existing roads.
- Temporary stockpiling and sidecasting of soil, construction materials, or other construction wastes.
- Soil compaction, dust, and water runoff from construction sites.
- Increased vehicle traffic.
- Short-term construction-related noise (from equipment), visual disturbance, and vibrational disturbance (from equipment and underground work).
- Degradation of water quality in drainages and other water bodies resulting from project runoff.
- Introduction or spread of invasive plant species.
- Reclamation of landscape.
- Maintenance of fire breaks and roads.
- Weed removal, brush clearing, and similar land management activities related to ongoing operation of the project.

The conditions listed below are examples of indirect effects on biological resources.

- Permanent alterations to light and noise levels.
- Damage through toxicity associated with herbicides.

Habitat Conservation Plan Avoidance and Minimization Measures

The Las Camas Solar Project HCP, prepared for the solar project as part of the incidental take permit process, identifies the proposed measures listed below, which have been incorporated into the project to avoid or minimize the taking of covered species (refer to Section 5.3 of the HCP for a detailed description of the measures).

Project Design Features

- **PD-1:** Security fences installed on the perimeter of the solar facility shall be designed to enable passage of kit foxes. Fences shall be monitored regularly to ensure that any damage or vandalism is quickly repaired.
- **PD-2:** Areas of the project site not permanently converted to infrastructure or roads shall be reseeded as grassland and managed (e.g., grazed or mowed) to allow annual grassland species and prey species to recolonize the project site.
- **PD-3:** Three underground utility easements with a total area of approximately 92.79 acres shall remain open to facilitate wildlife passage through the permit site.
- **PD-4:** Lighting shall be used from dusk to dawn for the project substation to conform to National Electrical Safety Code requirements and all applicable Merced County outdoor lighting codes. Other lighting requirements specifically designed to minimize effects on San Joaquin kit fox shall also be implemented.

General Avoidance and Minimization Measures

- **GEN-1:** All employees, consultants, and contractors shall receive environmental training prior to their participation in construction activities.
- **GEN-2:** At least 30 days prior to the onset of ground-disturbing construction, operations and maintenance, or decommissioning activities, permittee shall submit to the Service for approval the name(s) and credentials of the supervisory project biologist responsible for overseeing biological avoidance and minimization measures.
- **GEN-3:** At least one approved biological monitor shall be required on-site while ground-disturbing construction activity is occurring. Monitoring may cease once all ground-disturbing construction activity has ceased.
- **GEN-4:** Biological monitors shall have the authority to halt construction activities under specified conditions.
- **GEN-5:** All construction-related activities shall occur within designated work areas, including designated traffic and access routes.
- **GEN-6:** All construction activities shall terminate 30 minutes before sunset and shall not resume until 30 minutes after sunrise.
- **GEN-7:** To prevent inadvertent entrapment of San Joaquin kit foxes or other animals during the construction phase of the project, all excavated steep-walled holes or trenches more than 2 feet deep shall be secured/covered at the close of each working day. Before holes or trenches are filled, they shall be thoroughly inspected for trapped animals.
- **GEN-8:** All construction pipes, culverts, or similar structures with a 4-inch or greater diameter that are stored at the construction site for one or more overnight periods shall be closed off at both ends and thoroughly inspected before they are buried, capped, or otherwise used or moved in any way.
- **GEN-9:** All materials staged on the project site that have the potential to attract denning kit fox shall be inspected thoroughly by the biological monitor daily and prior to being moved.
- **GEN-10:** Speed limits within the project site shall be limited to 15 miles per hour (mph) during the day and 10 mph at night. During construction, all project-related vehicles and equipment shall be restricted to established roads, construction areas, and designated staging areas.
- **GEN-11:** Food-related trash shall be disposed of in closed containers and removed from the project site at least once daily.
- **GEN-12:** Construction personnel shall not be permitted to bring pets or firearms onto the project site. Firearms may be carried by authorized security personnel if deemed necessary during construction or operations so long as security personnel attend all training required herein.
- **GEN-13:** Within 1 working day of finding a dead, sick, or injured covered species on the project site, the biologist shall notify USFWS and CDFW orally and within 3 working days in writing. Notification in writing shall include the date, time, and location where the specimen was found and information about the conditions under which it was found.

- **GEN-14:** A map of the location of all observations of covered species observed during preconstruction surveys and during monitoring shall be prepared and submitted to USFWS and CDFW and submitted to the CNDDDB.
- **GEN-15:** A Revegetation Plan shall be prepared for the project. Prior to project commercial operation, all areas temporarily subject to ground disturbance, including staging areas, shall be reseeded or otherwise treated to achieve a revegetated state according to the timelines outlined in the Revegetation Plan.
- **GEN-16:** Rodenticide use on-site shall be prohibited.

San Joaquin Kit Fox-Specific Avoidance and Minimization Measures

- **SJKF-1:** A preconstruction survey shall be conducted before the beginning of ground disturbance or any activity likely to affect San Joaquin kit fox.
- **SJKF-2:** If potential San Joaquin kit fox den sites are located on the project site and within 200 feet of active construction, during or prior to ground-disturbing activities, the status of the dens shall be evaluated, and they shall be monitored by an approved biologist.
- **SJKF-3:** Construction activities shall be prohibited within exclusion zones around suitable burrows, based on their type. There would be an exception for vehicle traffic on roads that existed prior to discovery of the suitable burrow. The configuration of exclusion zones around San Joaquin kit fox dens should have the radius measured outward from the entrance or cluster of entrances, as follows.
 - Potential Den: A 50-foot avoidance buffer shall be used when kit fox occupation is expected but not confirmed.
 - Known Den: A 100-foot avoidance buffer shall be used if kit fox activity is observed.
 - Natal/Pupping Den: USFWS shall be contacted for technical advice, but buffer shall be at least 100 feet and shall not exceed 200 feet.
- **SJKF-4:** Unoccupied burrows can be collapsed under the supervision of a biologist, provided no other listed species are inside, or they can be temporarily blocked with sandbags or similar methods so that they do not become occupied during construction.
- **SJKF-5:** The applicant shall install artificial escape tunnels every 500 feet along the western boundary of the project fence and every 500 feet along each of the movement corridors inside of the project fence.
- **SJKF-6:** The supervisory project biologist shall be the contact for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured, or entrapped kit fox. The supervisory project biologist will be identified during the employee education program, and the person's name and telephone number shall be provided to all project employees.
- **SJKF-7:** Immediately upon notification of the supervisory project biologist of an inadvertent killing or injury involving San Joaquin kit fox, the supervisory project biologist shall contact the CDFW State Dispatch and the USFWS Endangered Species Division.

Impact BIO-1: 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 CDFW or USFWS? (With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts on biological resources that could result from build-out of the Community Plan. Refer to the discussion under Impacts 5.8-1, 5.8-2, 5.8-3, 5.8-4, 5.8-6, and 5.8-8, on pages 5.8-24—5.8-42, 5.8-44—5.8-45, and 5.8-46—5.8-47 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR anticipated that significant impacts on San Joaquin kit fox and Swainson’s hawk would occur due to fragmentation and loss of habitat, disturbance of Swainson’s nests and displacement, increased predation risk by domestic dogs, effects from human encroachment, and increased road mortality of kit fox. To mitigate these impacts, the Community Plan EIR identified Mitigation Measures 5.8-1 and 5.8-2 to protect, enhance, and preserve on- and off-site habitat and avoid and minimize impacts on-site during each phase of development. With implementation of these mitigation measures, the Community Plan EIR concluded that impacts to San Joaquin kit fox and Swainson’s hawk would be less than significant. The Community Plan Final EIR proposed additional measures to mitigate impacts on kit fox dispersal and ensure on-site conservation of habitat for kit fox within the on-site kit fox open space corridor. Refer to the discussion under Subsection 3.1.1, Kit Fox Habitat Connectivity and Dispersal, on pages 3-2—3-16 of the Community Plan Final EIR, which is incorporated by reference. These measures included amendments to Mitigation Measure 5.8-1 regarding on-site habitat protection and enhancement, off-site habitat preservation, and on-site avoidance and minimization measures (AMMs). The Community Plan EIR also anticipated potentially significant impacts on California red-legged frog, California tiger salamander, other non-listed special-status wildlife species, and one special-status plant species (shining navarretia). These impacts were similarly due to habitat loss and fragmentation; disturbance and displacement of individuals; effects from human encroachment, including predation and disease transmission risks; and increased risk of mortality from roadways, among other causes. To mitigate these impacts, the Community Plan EIR identified Mitigation Measures 5.8-3, 5.8-4, and 5.8-6 to avoid and minimize on-site impacts on these species during each project development phase. With implementation of these mitigation measures, the Community Plan EIR concluded that impacts on California red-legged frog, California tiger salamander, other non-listed special-status wildlife species, and special-status plant species would be less than significant. The Community Plan EIR found that impacts on biological resources in adjacent wildlife management areas and habitat mitigation sites in the project vicinity would be less than significant with implementation of other biological resource mitigation measures. Thus, overall, the Community Plan EIR concluded that impacts on biological resources would be less than significant with mitigation.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a utility-scale solar overlay (overlay). The overlay would allow for the development of energy generation facilities, communication equipment, electrical distribution/transmission and substation uses, public utility facilities, and additional ancillary buildings, fencing, roads, and equipment. The on-site

redesignations and zone change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would require an amendment to the General Plan and Community Plan to redesignate roughly 202.8 acres south of the solar project site from single-family residential use to high-density/medium-density residential use. The proposed off-site residential redesignation would occur on a site that is within the Community Plan area and designated for development under the approved plan. Therefore, it would not involve further development that would create additional habitat loss, barriers to movement, direct mortality risks, or other new sources of impacts on special-status plant or wildlife species. Development of the solar facility within the Community Plan area would actually benefit most of the special-status species with potential to occur on the project site because development of the solar facility would not eliminate all habitat value in this area.

Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. In addition, ICF did not observe any special-status plants during surveys or any new special-status wildlife species within the off-site residential redesignation area. Three active Swainson's hawk nests were documented within 0.7 mile of the redesignation area during 2022 surveys, with the closest occurring along a redesignation area boundary (Figure 3.4-3). However, the Community Plan EIR already includes mitigation measures for Swainson's hawk. Therefore, the proposed off-site residential redesignation would have a less-than-significant impact on biological resources with implementation of the Community Plan EIR mitigation measures, for the same reasons stated in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

Construction of the solar project, including the gen-tie line, would involve the conversion of primarily nonnative annual grassland and cropland land cover types into developed areas, resulting in the direct and permanent loss of potential breeding and foraging habitat for common wildlife species including western rattlesnake, western meadow lark, and black-tailed hare. Construction activities would permanently disturb 58.82 acres, modify 1,089.99 acres, and temporarily disturb 1,228.60 acres of habitat.

Modified habitat for San Joaquin kit fox, Swainson's hawk, and other special-status species identified in Table 3.4-4 would consist of the areas under the solar panels because they would still be accessible to special-status species for essential life-cycle elements, such as breeding, foraging, and denning.

Given the lack of suitable habitat, several special-status wildlife species identified in Table 3.4-4 and known to occur in the San Joaquin Valley region (i.e., four invertebrates [longhorn fairy shrimp, vernal pool fairy shrimp, vernal pool tadpole shrimp, and valley elderberry longhorn beetle], one fish [delta smelt], four amphibians [California tiger salamander, foothill yellow-legged frog, California red-legged frog, and western spadefoot toad], two reptiles [western pond turtle and giant garter snake], one bird [yellow-headed blackbird], and three mammals [Nelson's antelope squirrel, giant kangaroo rat, and Fresno kangaroo rat]) would not occur at the project site. Furthermore, because the results from the protocol-level surveys for special-status plants were negative and suitable habitat was not present, special-status plants would not have the potential to occur at the project site. Therefore, these species would not be affected by development of the solar project. The

project would not be required to implement Community Plan EIR Mitigation Measures 5.8-3 or 5.8-6, which include measures to reduce or avoid impacts on California red-legged frog, California tiger salamander, and special-status plant species, respectively.

Impacts associated with construction on the special-status species identified in Table 3.4-4 with low to high potential to occur on the project site could be significant. These species are discussed in detail below.

Blunt-Nosed Leopard Lizard, Blainville Horned Lizard, Pallid Bat, Townsend's Big-Eared Bat, Western Red Bat, estern Mastiff Bat, and Crotch's bumble bee

There are six special-status wildlife species with low potential for occurrence on the project site: blunt-nosed leopard lizard, Blainville horned lizard, Pallid bat, Townsend's big-eared bat, Western red bat, Western mastiff bat, and Crotch's bumble bee (Table 3.4-4). The habitat to support these species is considered marginal, and there are no recent occurrence records within 5 miles of the solar project site. Impacts on these species are considered unlikely; however, the following HCP measures would avoid or minimize a portion of the potential impacts on these species: PD-2, PD-3, PD-4, GEN-1, GEN-2, GEN-3, GEN-4, GEN-5, GEN-6, GEN-10, GEN-11, GEN-12, and GEN-15. The proposed establishment of a conservation easement on the off-site mitigation site would also minimize a portion of the potential impacts on these species because the habitat within the conservation easement would be of higher quality compared with the development site and able to potentially support these species. Mitigation Measures BIO-1a and BIO-1d would reduce the remaining impacts on blunt-nosed leopard lizard, Blainville horned lizard, pallid bat, Townsend's big-eared bat, Western red bat, Western mastiff bat, and Crotch's bumble bee to a less-than-significant level by requiring a biological monitor to be present during ground-disturbing activities and take specific actions. The biological monitor would be able to redirect construction activities if any of these species are identified in the work area during construction. The other measures discussed in Mitigation Measures BIO-1a and BIO-1d would also minimize impacts on these special-status species.

The solar project would implement project-specific Mitigation Measures BIO-1a and BIO-1d instead of Community Plan EIR Mitigation Measure 5.8-4, which requires future development under the Community Plan to implement measures to reduce or avoid impacts on nesting raptors and special-status wildlife species found in grassland habitat. The measures in project-specific Mitigation Measures BIO-1a and BIO-1d are more detailed and effective than the 2007 Community Plan EIR mitigation measure because they are based on site-specific field surveys and are tailored specifically to the solar project.

San Joaquin Coachwhip

As shown in Table 3.4-4, San Joaquin coachwhip has moderate potential to occur in the annual grassland habitat where development of the solar project would occur. Construction of the solar project could remove habitat and injure or kill individuals. The following HCP measures would avoid or minimize a portion of the potential impacts on San Joaquin coachwhip: PD-2, PD-3, PD-4, GEN-1, GEN-2, GEN-3, GEN-4, GEN-5, GEN-6, GEN-10, GEN-11, GEN-12, and GEN-15. The proposed establishment of a conservation easement on the off-site mitigation site would also minimize a portion of the potential impacts on this species because the habitat within the conservation easement would be of higher quality compared with the development site and able to potentially support San Joaquin coachwhip. However, impacts would remain potentially significant because development of the solar project could result in mortality for local populations of the San Joaquin

coachwhip. Mitigation Measure BIO-1a would reduce the remaining impacts on San Joaquin coachwhip to a less-than-significant level by requiring a biological monitor to be present during ground-disturbing activities and take specific actions. The biological monitor would be able to redirect construction activities if this species is identified in the work area during construction. The additional measures discussed in Mitigation Measure BIO-1a would further reduce impacts on San Joaquin coachwhip to a less-than-significant level.

The solar project would implement project-specific Mitigation Measure BIO-1a instead of Community Plan EIR Mitigation Measure 5.8-4, which requires future development under the Community Plan to implement measures to reduce or avoid impacts on San Joaquin coachwhip. The measures in project-specific Mitigation Measure BIO-1a are more detailed and effective than the 2007 Community Plan EIR mitigation measure because they are based on site-specific field surveys and are tailored specifically to the solar project.

Bald Eagle, White-Tailed Kite, Northern Harrier, and Tri-Colored Blackbird

As shown in Table 3.4-4, four bird species have moderate potential to occur on the project site (i.e., bald eagle, white-tailed kite, northern harrier, and tri-colored blackbird). None of these species were found to be nesting at the project site during focused nesting bird surveys conducted in 2022 and 2023. It is likely that all four species occasionally forage at the project site. Activities associated with construction of the solar project facility present ongoing sources of potential impact, such as the disruption of breeding behavior, abandonment and failure of nests and burrows, and direct injury or mortality of individuals. For example, trees would be trimmed or removed around project development features (e.g., within solar array construction areas), which could affect nesting birds through disturbance. Refer to Figure 3.4-6 for a map of trees within the solar project site that could be affected. The following HCP measures would avoid or minimize a portion of the potential impacts on bald eagles, white-tailed kites, northern harrier, and tri-colored blackbirds from construction of the solar project: PD-2, PD-3, PD-4, GEN-1, GEN-2, GEN-3, GEN-4, GEN-5, GEN-6, GEN-10, GEN-11, GEN-12, GEN-15, and SWHK-1. The proposed establishment of a conservation easement on the off-site mitigation site would also minimize a portion of the potential impacts on these species because the habitat within the conservation easement would be of higher quality compared with the development site and able to potentially support these species. However, impacts would remain potentially significant because development of the solar project could result in mortality if these special-status birds nest at or adjacent to the solar project site in the future. Mitigation Measures BIO-1a, BIO-1d, and BIO-1e would reduce the remaining impacts on bald eagle, white-tailed kite, northern harrier, and tri-colored blackbird to a less-than-significant level by requiring a biological monitor to be present during construction activities to redirect construction activities away from active special-status bird nests. Conducting vegetation clearing activities outside the nesting season, establishing avoidance buffers around active nests during construction, and constructing transmission towers, poles, and lines for the solar project in a manner that reduces avian electrocution would further reduce the impacts on these special-status birds to a less-than-significant level.

The solar project would implement project-specific Mitigation Measures BIO-1a, BIO-1d, and BIO-1e instead of Community Plan EIR Mitigation Measure 5.8-4, which requires future development under the Community Plan to implement measures to reduce or avoid impacts on special-status birds and nesting raptors. The measures in project-specific Mitigation Measures BIO-1a, BIO-1d, and BIO-1e are more detailed and effective than the 2007 Community Plan EIR mitigation measure because they are based on site-specific field surveys and are tailored specifically to the solar project.

As shown in Table 3.4-4, six special-status species have a high likelihood for occurrence on the project site (i.e., golden eagle, western burrowing owl [presence confirmed during surveys], loggerhead shrike [presence confirmed during surveys], Swainson's hawk [presence confirmed during surveys], American badger, and San Joaquin kit fox). These species are at greater risk of impact. Swainson's hawk was the only species with a noted breeding presence within the solar project site during the 2019 and 2022 surveys (Figure 3.4-3).

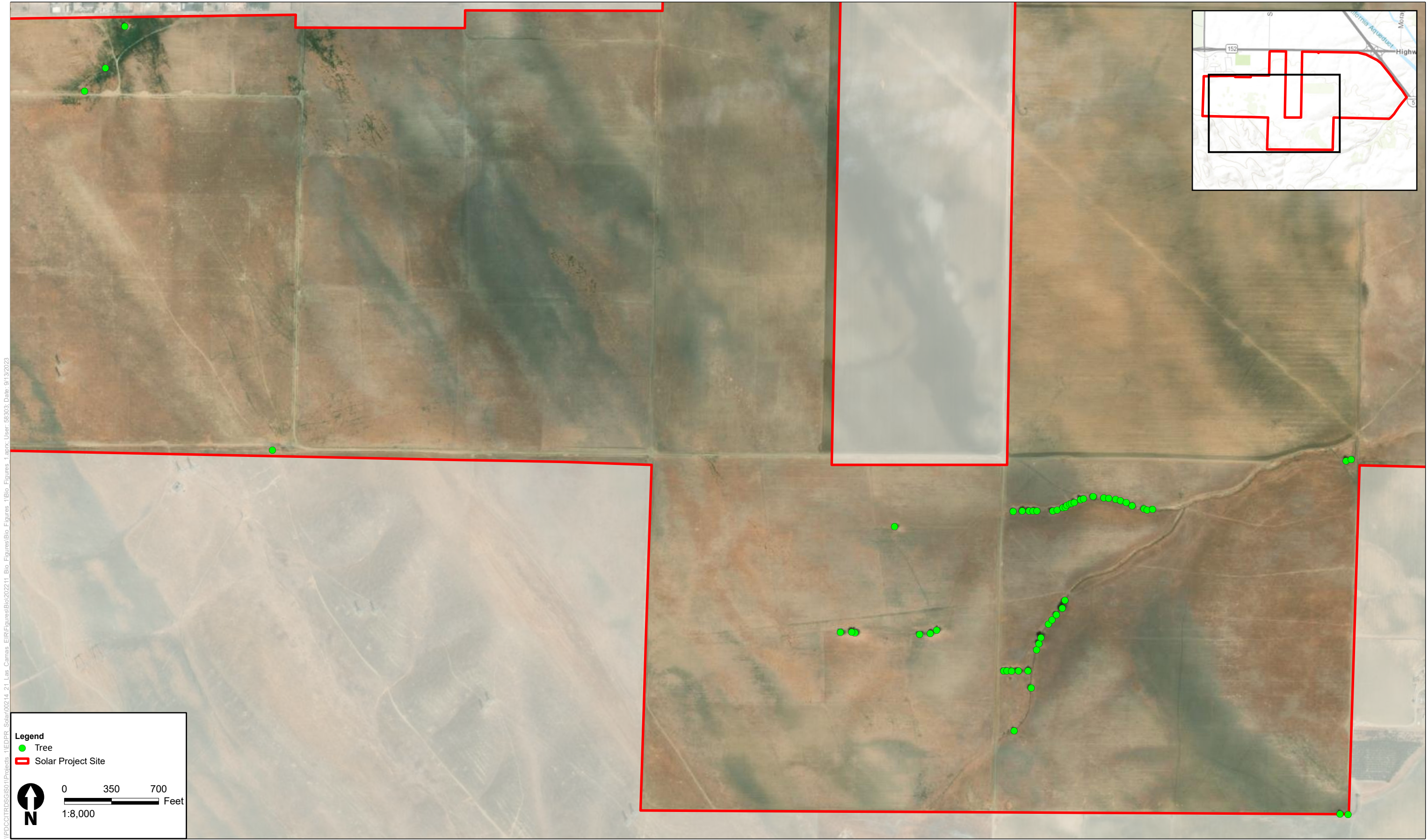
Golden Eagle

Golden eagles have been observed foraging near the project site each year from 2019 to 2023. Suitable nesting sites are present in the eucalyptus trees present at the solar project site; however, there have been no golden eagle nests identified at the solar project site. Activities associated with construction of the solar project facility present ongoing sources of potential impact, such as the disruption of breeding behavior, abandonment and failure of nests and burrows, and direct injury or mortality of individuals. The following HCP measures would avoid or minimize a portion of the potential impacts on golden eagle: PD-2, PD-3, PD-4, GEN-1, GEN-2, GEN-3, GEN-4, GEN-5, GEN-6, GEN-10, GEN-11, GEN-12, GEN-15, and SWHK-1. The proposed establishment of a conservation easement on the off-site mitigation site would also minimize a portion of the potential impacts on this species because the habitat within the conservation easement would be of higher quality compared with the development site and able to potentially support these special-status birds. However, impacts would remain potentially significant because development of the solar project could result in mortality if these special-status birds nest at or adjacent to the solar project site in the future. Mitigation Measures BIO-1a, BIO-1d, and BIO-1e would reduce the remaining impacts on golden eagle to a less-than-significant level by requiring a biological monitor to be present during construction activities to redirect construction activities away from golden eagle nest sites. Conducting vegetation clearing activities outside the nesting season, establishing avoidance buffers around active nests during construction, and constructing transmission towers, poles, and lines for the solar project in a manner that reduces avian electrocution would further reduce impacts on these special-status birds to a less-than-significant level.

The solar project would implement project-specific Mitigation Measures BIO-1a, BIO-1d, and BIO-1e instead of Community Plan EIR Mitigation Measure 5.8-4, which requires future development under the Community Plan to implement measures to reduce or avoid impacts on special-status birds and nesting raptors. The measures in project-specific Mitigation Measures BIO-1a, BIO-1d, and BIO-1e are more detailed and effective than the 2007 Community Plan EIR mitigation measure because they are based on site-specific field surveys and are tailored specifically to the solar project.

Western Burrowing Owl

Burrowing owls were observed at the project site in 2023. Activities associated with construction of the solar project present ongoing sources of potential impact, such as the disruption of breeding behavior, abandonment and failure of nests, and direct injury or mortality of individuals. The following HCP measures would avoid or minimize a portion of the potential impacts on burrowing owls: PD-2, PD-3, PD-4, GEN-1, GEN-2, GEN-3, GEN-4, GEN-5, GEN-6, GEN-10, GEN-11, GEN-12, and GEN-15. The proposed establishment of a conservation easement on the off-site mitigation site would also minimize a portion of the potential impacts on this species because the habitat within the conservation easement would be of higher quality compared with the development site and able to potentially support burrowing owls. However, impacts would remain potentially significant because development of the solar project could result in mortality if these special-status birds nest at or adjacent to the solar project site in the future. Mitigation Measures BIO-1a, BIO-1c, and BIO-1e



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Figure 3.4-6
Trees on the Solar Project Site

would reduce the remaining impacts on burrowing owls to a less-than-significant level by requiring a biological monitor to be present during construction activities to redirect construction activities away from burrowing owl nest sites. Conducting vegetation clearing activities outside the nesting season, establishing avoidance buffers around active nests during construction, and constructing transmission towers, poles, and lines for the solar project in a manner that reduces avian electrocution would further reduce impacts on these special-status birds to a less-than-significant level.

The solar project would implement project-specific Mitigation Measures BIO-1a, BIO-1c, and BIO-1e instead of Community Plan EIR Mitigation Measure 5.8-4, which requires future development under the Community Plan to implement measures to reduce or avoid impacts on special-status birds and nesting raptors, including burrowing owl. The measures in project-specific Mitigation Measures BIO-1a, BIO-1c, and BIO-1e are more detailed and effective than the 2007 Community Plan EIR mitigation measure because they are tailored specifically to the solar project.

Loggerhead Shrike

Loggerhead shrikes have been observed at the project during wildlife surveys. Activities associated with construction of the solar project present ongoing sources of potential impact, such as the disruption of breeding behavior, abandonment and failure of nests, and direct injury or mortality of individuals. For example, trees would be trimmed or removed around project development features (e.g., within solar array construction areas), which would affect nesting birds through disturbance. The following HCP measures would avoid or minimize a portion of the potential impacts on loggerhead shrike: PD-2, PD-3, PD-4, GEN-1, GEN-2, GEN-3, GEN-4, GEN-5, GEN-6, GEN-10, GEN-11, GEN-12, and GEN-15. The proposed establishment of a conservation easement on the off-site mitigation site would also minimize a portion of the potential impacts on this species because the habitat within the conservation easement would be of higher quality compared with the development site and able to potentially support loggerhead shrike. However, impacts would remain potentially significant because development of the solar project could result in mortality if these special-status birds nest at or adjacent to the solar project site in the future. Mitigation Measures BIO-1a, BIO-1d, and BIO-1e would reduce the remaining impacts on loggerhead shrike to a less-than-significant level by requiring a biological monitor to be present during construction activities to redirect construction activities away from loggerhead shrike nest sites. Conducting vegetation clearing activities outside the nesting season, establishing avoidance buffers around active nests during construction, and constructing transmission towers, poles, and lines for the solar project in a manner that reduces avian electrocution would further reduce impacts on these special-status birds to a less-than-significant level.

The solar project would implement project-specific Mitigation Measures BIO-1a, BIO-1d, and BIO-1e instead of Community Plan EIR Mitigation Measure 5.8-4, which requires future development under the Community Plan to implement measures to reduce or avoid impacts on special-status birds and nesting raptors, including loggerhead shrike. The measures in project-specific Mitigation Measures BIO-1a, BIO-1d, and BIO-1e are more detailed and effective than the 2007 Community Plan EIR mitigation measure because they are based on updated research and best practices.

Swainson's Hawk

Swainson's hawks were documented nesting at the project site in 2019 and 2022. Once the solar project is constructed, areas that were not permanently affected by solar project development should, over time, provide foraging opportunities for Swainson's hawk. Furthermore, portions of the

solar project that would no longer be actively cultivated or disked would be restored to annual grassland habitat. With conversion of the cropland to grassland habitat, along with the prohibited use of rodenticides, there should be an increase in the number of small mammals for Swainson's hawk to prey upon in open areas of the project site. At the nearby Wright Solar Park, Swainson's hawk and other raptor species have been observed repeatedly using the open areas within the project site and adjacent areas for foraging. Although the solar project site would continue to provide continued foraging opportunities for Swainson's hawks, establishment of the off-site mitigation site would ensure that approximately 1,498 additional acres would be set aside as undeveloped land. It is expected that this area would provide suitable foraging habitat for Swainson's hawks. Notwithstanding, activities associated with construction of the solar project present ongoing sources of potential impact, such as the disruption of breeding behavior, abandonment and failure of nests, and direct injury or mortality of individuals. For example, trees would be trimmed or removed around project development features (e.g., within solar array construction areas), which may affect nesting Swainson's hawks through disturbance. Refer to Figure 3.4-6 for a map of trees within and near the solar project site that may be affected.

The following HCP measures would avoid or minimize a portion of the potential impacts on Swainson's hawk: PD-2, PD-3, PD-4, GEN-1, GEN-2, GEN-3, GEN-4, GEN-5, GEN-6, GEN-10, GEN-11, GEN-12, and GEN-15. However, impacts would remain potentially significant because development of the solar project could result in mortality if these special-status birds nest at or adjacent to the solar project site in the future. Mitigation Measures BIO-1a, BIO-1b, BIO-1d, and BIO-1e would reduce the remaining impacts on Swainson's hawk to a less-than-significant level by requiring a biological monitor to be present during construction activities to redirect construction activities away from Swainson's hawk nest sites. Conducting vegetation clearing activities outside the nesting season, establishing avoidance buffers around active nests during construction, and constructing transmission towers, poles, and lines for the solar project in a manner that reduces avian electrocution would further reduce impacts on these special-status birds to a less-than-significant level. The solar project would implement project-specific Mitigation Measures BIO-1a, BIO-1b, BIO-1d, and BIO-1e instead of Community Plan EIR Mitigation Measure 5.8-2, which requires future development under the Community Plan to secure ITPs for Swainson's hawk if take would occur and implement other measures to reduce and avoid impacts on Swainson's hawk. The solar project would not result in take of Swainson's hawk, and the measures in project-specific Mitigation Measures BIO-1a, BIO-1b, BIO-1d, and BIO-1e are more detailed and effective than the 2007 Community Plan EIR mitigation measure because they are based on site-specific field surveys and are tailored specifically to the solar project based on updated research and best practices.

American Badger

As shown in Table 3.4-4, American badger has high potential to occur on the solar project site, and a potential burrow was identified adjacent to the solar project site in 2019. Construction of the solar project could remove habitat and injure or kill individuals. The following HCP measures would avoid or minimize a portion of the potential impacts on American badger: SJKF-1, SJKF-2, SJKF-3, SJKF-6, SJKF-7, PD-1, PD-2, PD-3, PD-4, GEN-8, GEN-10, GEN-11, GEN-12, GEN-13, and GEN-16. The proposed establishment of a conservation easement on the off-site mitigation site would also minimize a portion of the potential impacts on this species because the habitat within the conservation easement would be of higher quality compared with the development site and able to potentially support American badger. However, impacts would remain potentially significant because development of the solar project could result in mortality for local populations of American badgers. Mitigation Measures BIO-1a and BIO-1f would reduce the remaining impacts on American

badger to a less-than-significant level by requiring pre-construction surveys for dens, den avoidance, and a biological monitor to be present during ground-disturbing activities. The biological monitor would be able to redirect construction activities if this species is identified in the work area during construction. The additional measures discussed in Mitigation Measures BIO-1a and BIO-1f would further reduce impacts on American badger to a less-than-significant level.

The solar project would implement project-specific Mitigation Measures BIO-1a and BIO-1f instead of Community Plan EIR Mitigation Measure 5.8-4, which requires future development under the Community Plan to implement measures to reduce or avoid impacts on American badger. The measures in project-specific Mitigation Measures BIO-1a and BIO-1f are more detailed and effective than the 2007 Community Plan EIR mitigation measure because they are based on site-specific field surveys and are tailored specifically to the solar project.

San Joaquin Kit Fox

The San Joaquin kit fox was recently recorded just south of the solar project site. Almost all of the solar project site is considered to have low to no suitability for San Joaquin kit fox. Areas that would be temporarily disturbed during solar project construction would be restored to pre-construction conditions within one year. Such areas are found around the solar arrays and gen-tie line. Additional activities associated with construction of the solar project present ongoing sources of potential impact, such as the disruption and failure of natal dens and direct injury or mortality of individuals. Permanently converted habitat would result from construction of the solar trackers, access roads, substation and interconnection facilities, and battery storage area.

Recent studies of San Joaquin kit fox use of solar farms found that solar projects can be constructed and operated in a way that accommodates San Joaquin kit fox (Cypher et al. 2021). This analysis, which included information from seven large solar facilities, indicated that two measures in particular are critically important in facilitating use of solar facilities by species of conservation concern. One is permeable security fencing; the other is encouragement and management of vegetation within the facilities. In general, some solar facilities have been shown to provide benefits that enhance San Joaquin kit fox survival by excluding predators such as coyotes and minimizing risks from avian predators. Overall, the probability of survival, reproductive success, litter size, and kit fox density were similar between solar sites and control sites. Building off these principles, the following HCP measures would avoid or minimize potential impacts on San Joaquin kit fox from construction of the solar project: SJKF-1, SJKF-2, SJKF-3, SJKF-6, SJKF-7, PD-1, PD-2, PD-3, PD-4, GEN-8, GEN-10, GEN-11, GEN-12, GEN-13, and GEN-16.

As described in the USFWS *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or during Ground Disturbance* (2011), in cases where den avoidance is not a reasonable alternative, limited destruction of potential San Joaquin kit fox dens may be allowed. However, the destruction of dens would be subject to the project's incidental take authorization from USFWS and CDFW, thereby avoiding significant impacts on the species. Therefore, with issuance of the requested ITPs and implementation of the HCP, impacts on San Joaquin kit fox would be less than significant. The solar project would not be required to implement Community Plan EIR Mitigation Measure 5.8-1, which requires future development under the Community Plan to secure ITPs if take would occur, provide off-site mitigation, and implement other measures to reduce and avoid impacts on San Joaquin kit fox, because these requirements are addressed by the project's HCP and requested ITPs.

Summary

For the reasons discussed above, implementation of the following mitigation measures would be required to mitigate potential impacts on special-status species identified in Table 3.4-4 with low to high potential to occur at the project site. Thus, impacts would be less than significant with implementation of project-specific Mitigation Measures BIO-1a through BIO-1f, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure BIO-1a: Avoid and minimize impacts on biological resources

To avoid and minimize potential impacts on wildlife and their habitats during construction and decommissioning, the solar project applicant shall require its construction contractors, as a condition of contract, to implement the following measures, subject to verification by the Merced County Department of Public Works prior to issuance of a construction permit.

- Employees and contractors performing construction and decommissioning activities shall receive environmental sensitivity training. Training shall include review of environmental laws, mitigation measures, permit conditions, and other requirements that must be followed by all personnel to reduce or avoid effects on wildlife resources during construction and decommissioning activities.
- Vehicles and equipment shall be parked on pavement, existing roads, and previously disturbed areas to the extent practicable.
- Off-road vehicle travel shall be avoided to the extent feasible.
- Grading shall be restricted to the minimum area necessary.
- Prior to ground-disturbing activities, sensitive habitats shall be flagged by the biological monitor and temporary fencing shall be in place during construction to reduce the potential for vehicles and equipment to stray into these habitats. Materials shall not be stockpiled in these areas. Vehicles or equipment shall not be refueled within 100 feet of a wetland, stream, or other waterway unless a bermed and lined refueling area (i.e., a created berm made of sandbags or other removable material) is constructed.
- Erosion control measures shall be implemented to reduce sedimentation in nearby aquatic habitat when activities are the source of potential erosion. Plastic monofilament netting (i.e., erosion control matting) or similar material containing netting shall not be used at the project site. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.
- Herbicides may be applied if noxious weeds impede construction or operations and maintenance, as well as solar array photovoltaic effectiveness, and cannot be controlled by other methods.
- The following shall not be allowed at or near work sites for project activities: trash dumping; open fires, such as barbecues; or hunting.
- A biological monitor shall be on-site during initial ground-disturbing activities within and adjacent to grassland areas and during the removal of any trees. The biological monitor shall be approved by CDFW and USFWS and have experience with wildlife within the region, including golden eagle, Swainson's hawk, western burrowing owl, loggerhead shrike, American badger, and San Joaquin kit fox. The biological monitor shall assist the crew, as needed, to comply with all project implementation restrictions and guidelines. In addition,

the biologist shall be responsible for ensuring that the developer or its contractors maintain exclusion areas adjacent to sensitive biological resources and documenting compliance with all biological resources–related mitigation measures.

Mitigation Measure BIO-1b: Avoid and minimize effects on nesting Swainson’s hawks

If the project proponent has obtained an incidental take permit for Swainson’s hawk from CDFW, it shall comply with the terms of that permit. If the project proponent has not obtained an incidental take permit, the solar project applicant shall require its construction contractors, as a condition of contract, to implement the following measures to avoid or minimize effects on nesting Swainson’s hawks, subject to verification by the Merced County Department of Public Works prior to issuance of a construction permit:

- The trees within the solar project footprint that need to be removed for construction or any other trees within the solar project site that need to be removed or trimmed for project construction shall be removed or trimmed between September 1 and January 31 to avoid adversely affecting nesting Swainson’s hawk and other nesting birds. No tree with a Swainson’s hawk shall be removed without prior conferral with CDFW.
- Prior to initiating construction or decommissioning activities, a biologist with experience in surveying for Swainson’s hawk shall conduct nesting surveys according to the guidance in the Swainson’s Hawk Technical Advisory Committee’s (2000) *Recommended Timing and Methodology for Swainson’s Hawk Nesting Surveys in California’s Central Valley*. This protocol recommends that surveys be conducted within 0.5 mile of the project boundary and requires multiple surveys to be conducted during at least two survey periods immediately prior to ground-disturbing activities. As specified in the Swainson’s hawk survey methods, an optional survey may be conducted between January and March 20 to identify potential nest sites, old nests, and those nests of other raptors that begin nesting early.
- If an active Swainson’s hawk nest is discovered at any time within 0.5 mile of active construction, a qualified biologist shall complete an assessment of the potential for current construction activities to affect the nest. The assessment shall consider the type of construction activities (e.g., noise levels and duration), the location of construction relative to the nest and pre-existing disturbance levels (e.g., construction activities in historically agricultural land versus activities in non-agricultural land), the visibility of construction activities from the nest location (e.g., topography or vegetation that could block line of sight to the nest), the number of construction personnel required to perform activities within the setback, and other existing disturbances in the area that are not related to construction activities of this project. Based on this assessment, the biologist shall determine if construction activities can proceed and the level of nest monitoring required. When conducting the assessment, the biologist shall consider the following levels of construction activity, with higher levels of activity requiring greater caution in determining setbacks:
 - Light construction activity, such as fence installation and limited vehicle operation: Noise levels generated by these construction activities would very likely be similar to existing ambient noise levels closer to the occupied nests.
 - Moderate and/or isolated construction activity, such as grading and construction/ installation of the substation, substation access road, inverter skids, and solar panels: Noise levels generated by these construction activities would very likely be similar to existing ambient noise levels beyond a moderate distance from the occupied nests.

- Heavy construction activity across a large area of the project site and/or the use of louder equipment, such as pile drivers, concrete saws, or jackhammers: Noise levels from these types of activities would depend on the location of the activities relative to the nest. Allowing these activities within the 0.5-mile setback would require coordination with CDFW.

If the assessment determines that construction activities could occur closer than 0.5 mile from an active nest, in no event shall construction activities occur within 500 feet of an active nest without conferring with CDFW. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks shall be required. The qualified biologist shall have the authority to stop work if it is determined that project construction is disturbing nesting activities. Buffers may need to increase, depending on the sensitivity of the nesting Swainson's hawk to disturbances, at the discretion of the qualified biologist. No avoidance shall be needed if construction occurs near a known Swainson's hawk nest outside of the Swainson's hawk nesting season. In the event that take cannot be avoided, the proponent shall confer with CDFW on the need for an incidental take permit.

Mitigation Measure BIO-1c: Avoid, minimize, and compensate for potential impacts on western burrowing owl

The solar project applicant shall require its construction contractors, as a condition of contract, to implement the following measures, subject to verification by the Merced County Department of Public Works prior to issuance of a construction permit. The measures, which were based on the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012), shall be implemented to avoid or minimize potential adverse impacts on burrowing owls prior to and during solar project construction and decommissioning.

- A qualified biologist shall conduct preconstruction take avoidance surveys for burrowing owl no less than 14 days prior to and within 24 hours of initiating ground-disturbing activities. The survey area shall encompass the work area and a 500-foot buffer around this area.
- To the maximum extent feasible, construction activities within 500 feet of active burrowing owl burrows shall be avoided during the nesting season (February 1–August 31).
- If an active burrow is identified near a proposed work area and work cannot be conducted outside the nesting season (February 1–August 31), a no-activity zone shall be established by a biologist experienced with burrowing owls. The no-activity zone shall be large enough to avoid nest abandonment and extend a minimum of 250 feet around the burrow.
- If burrowing owls are present at the proposed work site during the nonbreeding season (September 1–January 31), a qualified biologist shall establish a no-activity zone that extends a minimum of 150 feet around the burrow.
- If the designated no-activity zone for either breeding or non-breeding burrowing owls cannot be observed, a wildlife biologist experienced in burrowing owl behavior shall evaluate site-specific conditions and, in coordination with CDFW, recommend a smaller buffer (if possible) that still minimizes the potential to disturb the owls. The site-specific buffer shall consider the type and extent of the proposed activity occurring near the occupied burrow, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity to background activities.

- If burrowing owls are present in the direct disturbance area and cannot be avoided during the non-breeding season (generally September 1–January 31), passive relocation techniques (e.g., installing one-way doors at burrow entrances) may be used. Passive relocation may also be used during the breeding season (February 1–August 30) if a biologist with burrowing owl experience, coordinating with CDFW, determines through site surveillance and/or scoping (California Burrowing Owl Consortium 1993) that the burrow is not occupied by burrowing owl adults, young, or eggs. Passive relocation shall be accomplished by installing one-way doors (e.g., modified dryer vents or other CDFW-approved method), which shall be left in place for a minimum of 1 week and monitored daily to ensure that the owls have left the burrow. Excavation of the burrow shall be conducted using hand tools. During excavation of the burrow, a section of flexible plastic pipe (at least 3 inches in diameter) shall be inserted into the burrow tunnel to maintain an escape route for any animals that may be inside the burrow.
- The destruction of unoccupied burrows outside the work area shall be avoided to the extent practicable, and visible markers shall be placed near burrows to ensure that they have not collapsed.
- Ongoing surveillance of the solar project site shall be conducted to locate burrowing owls during project activities. If additional owls are observed using burrows within 500 feet of construction, the on-site biological monitor shall determine, in coordination with CDFW, if the owls are or would be affected by construction activities and if additional exclusion zones are required.

Mitigation Measure BIO-1d: Avoid and minimize impacts on nesting birds

The solar project applicant shall require its construction contractors, as a condition of contract, to implement the following measures, subject to verification by the Merced County Department of Public Works prior to issuance of a construction permit. The measures shall be implemented during construction and decommissioning of the solar project to ensure that it does not have a significant impact on nesting special-status and non-special-status birds.

- Suitable nesting habitat (trees and ground vegetation) shall be removed during the non-breeding season (generally September 1–January 31).
- To the extent feasible, construction activities in or near suitable or occupied nesting habitat shall be avoided during the breeding season of birds (generally February 1–August 31).
- If construction activities (including vegetation removal, clearing, and grading) occur during the nesting season for migratory birds, a qualified biologist shall conduct preconstruction nesting bird surveys within 14 days prior to construction activities within a given work area. Suitable habitat within the construction area and areas within a 500-foot buffer shall be surveyed for tree-nesting raptors, and a 50-foot buffer shall be surveyed for all other bird species. The initial survey shall be conducted at least 14 days prior to construction to allow adequate time to develop an avoidance strategy if nests are identified. A final survey shall be conducted within 24 hours of ground-disturbing activities.
- If active nests are found during the survey or at any time during construction of the project, an avoidance buffer, ranging from 50 to 500 feet, may be required, with the avoidance buffer from any specific nest being determined by a qualified biologist. The avoidance buffer shall remain in place until the biologist has determined that the young are no longer reliant on

adults or the nest or breeding attempts have otherwise been unsuccessful. Work may occur within the avoidance buffer under approval and guidance from the biologist, but full-time monitoring may be required. The biologist shall have the ability to stop construction if nesting adults show any sign of distress.

Mitigation Measure BIO-1e: Minimize the potential for birds to be affected by new project transmission lines

The developer shall install all transmission towers, poles, and lines for the solar project in accordance with the guidelines in *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Avian Power Line Interaction Committee 2006), or the most current version of the guidelines available at the time of construction, which provides facility design recommendations for reducing avian electrocution. The developer shall also construct facilities following the guidance in *Reducing Avian Collisions with Power Lines: State of the Art in 2012* (Avian Power Line Interaction Committee 2012), which provides guidance for reducing bird injury and mortality from collisions with electrical lines. Measures may include one or more of the following: line marking (using devices to make lines more visible), managing surrounding lands, changing the size and configuration of wires, rerouting the line, or burying lines. The Merced County Department of Public Works shall confirm that the project plans comply with these requirements prior to issuance of a construction permit.

Mitigation Measure BIO-1f: Avoid and minimize impacts on American badger

Suitable habitat for American badger is present throughout most of the proposed work areas. The solar project applicant shall require its construction contractors, as a condition of contract, to implement the following measures, subject to verification by the Merced County Department of Public Works prior to issuance of a construction permit. The measures, which are identified in the 2011 *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or during Ground Disturbance*, in addition to those in the HCP for San Joaquin kit fox, shall be implemented during construction, and decommissioning of the solar project to ensure that no significant impact on American badger occurs. These measures are appropriate protocols for protecting American badger, given that both American badgers and San Joaquin kit fox have similar denning and habitat requirements. If specified that USFWS should be notified and/or consulted, CDFW should be as well.

- To the maximum extent feasible (as determined in consultation with USFWS and CDFW), potential dens (5–8 inches in diameter) for American badger shall be avoided. Staging areas shall be moved to avoid removing or directly affecting potential dens.
- Preconstruction surveys for American badgers shall be conducted in conjunction with San Joaquin kit fox preconstruction surveys required by the HCP (measures SJFK-1–SJFK-7).
- The biologists shall conduct den searches by systematically walking transects through the solar project site and a buffer area, to be determined in coordination with USFWS and CDFW. Transect distance shall be based on the height of vegetation such that 100 percent visual coverage of the solar project site is achieved. If a potential or known den is found during the survey, the biologists shall measure the size of the den, evaluate the shape of the den entrances, and note tracks, scat, prey remains, and recent excavations at the den site. The biologists shall also determine the status of the dens and map the features. Dens shall be classified according to one of the four den status categories, as defined by USFWS (2011).

- Construction activities shall be prohibited or greatly restricted within exclusion zones of potentially occupied or known occupied dens. Only essential vehicular operation on existing roads and foot traffic shall be permitted. All other construction activities, vehicle operation, material and equipment storage, and other ground-disturbing activities shall be prohibited in the exclusion zones. Barrier fencing shall be removed within 72 hours of completion of work.
- Any occupied or potentially occupied badger den shall be avoided by establishing an exclusion zone consistent with the USFWS guidelines (2011) for San Joaquin kit fox.
 - If a potential American badger den is located within the construction area and cannot be avoided, the den must be monitored for 3 consecutive days with tracking medium or an infra-red camera to determine the current use. If no American badger activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.
 - If American badger activity is observed at the den during the monitoring period, the den should be monitored for at least 5 consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after 5 or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant (e.g., during the animal's normal foraging activities).

Operation

Operation of the solar project poses risks for listed and special-status species similar to those discussed for construction. Potential effects from project lighting during operation would be avoided and minimized by HCP measure PD-4. Potential effects on San Joaquin kit fox burrows would be avoided or minimized by HCP measures SJKF-1, SJKF-2, SJKF-3, SJKF-6, SJKF-7, GEN-8, GEN-10, GEN-13, and GEN-16. The proposed establishment of a conservation easement on the off-site mitigation site would also minimize a portion of the potential impacts on special-status species because the habitat within the conservation easement would be of higher quality compared with the development site and able to potentially support special-status species. Operation of solar project infrastructure, including overhead transmission lines, such as the gen-tie line, presents a collision and electrocution risk for special-status species, including birds, such as Swainson's hawk, especially during periods of poor visibility.

Once the solar project is constructed, areas that were not permanently affected by solar project development should, over time, provide increased foraging opportunities for San Joaquin kit fox. Furthermore, portions of the solar project that would no longer be actively cultivated or disked would be restored to annual grassland habitat. With conversion of the cropland to grassland habitat, along with the prohibited use of rodenticides, there should be an increase in the number of small mammals available as prey for listed species. Recent studies of San Joaquin kit fox use of solar farms found that solar projects can be constructed and operated in a way that accommodates San Joaquin kit fox (Cypher et al. 2021). This analysis, which included information from seven large solar facilities, indicated that two measures in particular are critically important in facilitating use of solar facilities by species of conservation concern. One is permeable security fencing; the other is encouragement and management of vegetation within the facilities. In general, some solar facilities have been shown to provide benefits that enhance San Joaquin kit fox survival by excluding predators such as coyotes and minimizing risks from avian predators.

Bird deaths have been reported at solar power collection facilities in the California desert (Clarke 2013). The deaths of migrating waterfowl and other birds have been postulated to be the result of a “lake effect” in which birds mistake reflections from massed solar arrays for water. According to this hypothesis, upon landing, the birds are either directly preyed upon or unable to become airborne again and die of exposure and starvation. The causes of death documented at solar facilities include solar flux, impact trauma, predation trauma, electrocution, and emaciation; however, the cause of death is often unknown (Kagan et al. 2014 in Watson et al. 2015). The development of photovoltaic (PV) utility-scale solar energy (USSE) in the desert Southwest of the United States of America (USA) was thought to have the potential to negatively affect birds through habitat loss, habitat fragmentation, and collision mortality with infrastructure, similar to other forms of energy development. Although bird mortality was anticipated, the discovery of stranded or dead waterbirds was not expected as PV USSE facilities do not contain water-settling ponds as are found with other types of energy development (Kosciuch et al. 2021).

The proposed solar arrays have the potential to attract migratory waterfowl and shorebirds that could mistake the grouped panels for bodies of water. This could result in mortality from collisions with panels, fences, and transmission lines or the attraction of water birds that are dependent on water for taking flight. However, in a report by Wallace Erickson, Ken Levenstein, and Paul Kerlinger for the proposed 324-acre “Kingbird” solar facility in Kern County, the authors note that avian mortality concerns are typically elevated when projects are situated in areas of high use (Kern County Planning and Community Development Department 2014). However, after discussing the typical risk factors that result in avian mortality (e.g., facility size, structure height, guy wires, siting in areas of high risk, and other factors), this report concluded that “there is no evidence that this type of project will result in high levels of avian mortality such as to risk population declines or cause any significant biological impacts.” The 40-megawatt Kingbird project is similar to the proposed project in that it involves photovoltaic panels of a similar size and height that would be arrayed across the landscape.

Wright Solar Park, located approximately 1 mile south of the project site and of a similar size, implemented an Avian Protection Plan for the purpose of reducing potential impacts on avian species. The Avian Protection Plan required 3 years of post-construction monitoring to investigate avian mortality surrounding the solar facility. Over the 3-year monitoring period, 26 mortalities were reported during surveys. None of the mortalities were waterfowl or shorebirds. Point count surveys at the site over the 3-year period had a very low mean number of waterfowl and shore bird detections. and due to the low mean number of detections per avian use survey, it is not anticipated that operation of the proposed solar facility would pose a substantial risk to migrating waterfowl and shorebirds in the area throughout the year. Therefore, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Vegetation maintenance around solar arrays could result in the disturbance and destruction of badger and burrowing owl dens and burrows, which could lead to abandonment and death of young and/or adults present within burrows. These activities have the potential to result in significant impacts because they could reduce the population size of local species identified as candidate, sensitive, or special-status species through direct mortality. For the reasons stated above under the analysis of construction impacts, impacts would be less than significant with implementation of project-specific Mitigation Measures BIO-1c and BIO-1e, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure BIO-1e: Minimize the potential for birds to be affected by new project transmission lines

Refer to Mitigation Measure BIO-1e above.

Decommissioning

Decommissioning of the solar project poses risks for wildlife similar to those discussed for construction. For the reasons stated above under the analysis of construction impacts, impacts would be less than significant with implementation of project-specific Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1d, and BIO-1f, consistent with the Community Plan EIR conclusions. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Development conditions outside the Community Plan area would be very similar to those described above within the Community Plan area for the special-status species with potential to occur in that area. Therefore, impact acreages with respect to solar development were analyzed for the entire development, irrespective of whether the solar development occurs inside or outside the Community Plan area, and mitigation through the HCP, the off-site mitigation area, and project-specific mitigation measures will provide mitigation for the entire project irrespective of whether it is in the Community Plan area. Therefore, for the reasons stated above, solar project impacts would be less than significant with implementation of project-specific mitigation measures BIO-1a through BIO-1f, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Off-Site Mitigation Site

The project does not propose any development within the off-site mitigation site. The off-site mitigation site would be set aside in perpetuity for San Joaquin kit fox and other covered species, as necessary. The site would continue to be grazed and mowed. Targeted invasive plant management activities would be necessary to prevent invasion by pest plant species. The establishment of the off-site mitigation site and invasive plant management activities would not have 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. Therefore, impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation, including BIO-1a through BIO-1f, would be required.***

PG&E Substation Improvements

Construction activities associated with the PG&E substation improvements pose potential hazards to multiple species in the area, including Swainson's hawk, San Joaquin kit fox, western burrowing owl, and other special-status species identified in Table 3.4-4. Because of the small size of the expansion area (less than 10 acres), the impacts on special-status species from development of this site would be considered small. Impacts on special-status species would be similar to those described above for construction of the solar project. The acreage for development of the substation improvement project has been accounted for in the overall impacts associated with development of the solar project. The

proposed establishment of the conservation easement on the off-site mitigation site would provide mitigation lands to offset the permanent removal of this suitable habitat. As discussed in Subsection 2.3.3 in Chapter 2, *Project Description*, PG&E would implement the following standard practice AMMs/BMPs to avoid and minimize impacts on biological resources:

- **PG&E AMM/BMP-19: Conduct Pre-Construction Survey(s) for Special-Status Species and Sensitive Resource Areas.** Biologists will conduct pre-construction survey(s) for special-status species and sensitive resource areas immediately prior to construction activities within suitable aquatic and upland habitat for special-status species.
- **PG&E AMM/BMP-20: Avoid Impacts on Nesting Birds.** Biologists will conduct nest detection surveys prior to project work scheduled during the nesting season and establish measures to avoid disturbance to nesting birds as needed.
- **PG&E AMM/BMP-21: Biological Monitoring.** Biologists will monitor initial ground-disturbing activities in and adjacent to sensitive habitat areas to ensure compliance with BMPs and AMMs, unless the area has been protected by barrier fencing to protect sensitive biological resources and has been cleared by the biologists.
- **PG&E AMM/BMP-22: Special-Status Species Protection.** Project areas will be inspected each workday for wildlife prior to construction activities within areas suitable for special-status species. In addition, the project area will be cleared of debris and secured to avoid impeding wildlife movement.
- **PG&E AMM/BMP-23. San Joaquin Kit Fox and Blunt-Nosed Leopard Lizard Protection.** Species-specific procedures (e.g., establishing exclusion zones) will be followed to avoid impacts on San Joaquin kit fox and blunt-nosed leopard lizard in areas with evidence that those species may be present.²
- **PG&E AMM/BMP-24: Dead or Injured Special-Status Wildlife.** Construction work will stop in the immediate vicinity of any dead or injured special-status wildlife or birds protected by the MBTA, pending coordination with the biologists and appropriate resource agency.

Implementation of the AMMs/BMPs would avoid or minimize disturbance and mortality for wildlife by requiring pre-construction surveys for special-status species; establishing buffers around active nests and burrows; monitoring initial ground-disturbing activities or establishing wildlife barriers around work sites; designing and monitoring trenches, excavations, and pipes measuring 4 inches or more in diameter to avoid entrapment or mortality of wildlife; ceasing construction activity if a listed animal is encountered (until the animal has safely moved out of the area on its own or with assistance from a qualified biologist); removing trash properly; using materials other than monofilament plastic for erosion control; and monitoring for dead or injured special-status wildlife. Therefore, with application of the AMMs/BMPs by PG&E, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

² Blunt-nose leopard lizard has a low potential to occur on site. However, these are standard PG&E measures implemented on all projects and are therefore included in this document.

Whole Project

Based on the analysis above, when considering the combined impacts on biological resources from the entire proposed project, including its off-site residential redesignation area, the PG&E substation improvements, the off-site mitigation site, and the solar project itself, with implementation of project-specific mitigation, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Impact BIO-2: Have a substantial adverse effect on State- or federally protected wetlands (including, but not limited to, marshes, vernal pools, and coastal areas) through direct removal, filling, hydrological interruption, or other means? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR concluded in Impact 5.8-5 that implementation of the Community Plan project could result in the loss of up to 17 acres of wetlands and ephemeral washes in the Community Plan area. The Community Plan EIR concluded that implementation of Community Plan EIR Mitigation Measure 5.8-5 would reduce the impact to a less-than-significant level.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create an overlay. The overlay would allow for the development of energy generation facilities, communication equipment, electrical distribution/transmission and substation uses, public utility facilities, and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would require an amendment to the General Plan and Community Plan to redesignate roughly 202.8 acres south of the solar project site from single-family residential use to high-density/medium-density residential use. The proposed off-site residential redesignation would occur on a site that is within the Community Plan area and designated for development under the approved plan. It would serve to preserve but not increase the number of overall residential units contemplated under the Community Plan EIR. The redesignation, therefore, would not involve further development that would create additional impacts on wetlands. In addition, future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

The solar project site contains a potentially State jurisdictional ephemeral drainage within the southeastern portion. The solar project has been designed to avoid this feature (see Figure 2-2 in Chapter 2, *Project Description*). In addition, this feature would be avoided during gen-tie line construction and decommissioning on the solar project site. Therefore, the solar project site would not have an effect on State- or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. Therefore, impacts from the solar project construction would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.*** The solar project would not be required to implement Community Plan EIR Mitigation Measure 5.8-5 because on-site jurisdictional waters would be avoided.

Operation

Operation of the solar project would not result in any additional land disturbance. Avoidance of the potentially State jurisdictional ephemeral stream within the southeastern portion of the site would occur during operation as well as construction. For these reasons, project operation would not have a substantial adverse effect on State- or federally protected wetlands (including, but not limited to, marshes, vernal pools, and coastal areas) through direct removal, filling, hydrological interruption, or other means. Therefore, impacts from the solar project operation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.*** The solar project would not be required to implement Community Plan EIR Mitigation Measure 5.8-5 because on-site jurisdictional waters would be avoided.

Decommissioning

Decommissioning of the solar project would not result in any additional land disturbance. Avoidance of the potentially State jurisdictional ephemeral stream within the southeastern portion of the site would occur during decommissioning as well as construction and operation. For these reasons, project decommissioning would not have a substantial adverse effect on effect on State- or federally protected wetlands (including, but not limited to, marshes, vernal pools, and coastal areas) through direct removal, filling, hydrological interruption, or other means. Therefore, impacts from the solar project decommissioning would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.*** The solar project would not be required to implement Community Plan EIR Mitigation Measure 5.8-5 because on-site jurisdictional waters would be avoided.

Additional Proposed Development Outside of the Community Plan

Solar Project

No State- or federally protected wetlands or other waters occur on the portion of the solar project site outside of the Community Plan boundary; Community Plan EIR Mitigation Measure 5.8-5 would not be required because on-site jurisdictional waters would be avoided. Therefore, impacts from the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Off-Site Mitigation Site

No development is proposed for the off-site mitigation site, which includes the acreage for the grassland habitat that would be placed into a conservation easement in perpetuity as well as the land managed for the benefit of San Joaquin kit fox and other covered species, as necessary. Because the off-site mitigation site would include only grassland habitats, conservation of these lands would not have a substantial adverse effect on State- or federally protected wetlands (including, but not limited to, marshes, vernal pools, and coastal areas) through direct removal, filling, hydrological interruption, or other means. Community Plan EIR Mitigation Measure 5.8-5 would not be required because on-site jurisdictional waters would be avoided. Therefore, impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The PG&E substation modifications are not expected to have a substantial adverse effect on State- or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. Although the substation property does contain small, potentially State-protected wetlands and a small linear water feature, with application of the following PG&E AMMs/BMPs (detailed in Subsection 2.3.3 of Chapter 2, *Project Description*), impacts to these features would be minimized to the extent practicable.

- **PG&E AMM/BMP-10: Stormwater Pollution Prevention Plan.** A SWPPP will be prepared for the PG&E substation improvements.
- **PG&E AMM/BMP-25: Avoidance of Sensitive Aquatic Features.** The project will be designed to avoid sensitive aquatic features (e.g., jurisdictional wetlands, waters, riparian areas) to the extent feasible.

Community Plan EIR Mitigation Measure 5.8-5 would not be required because on-site jurisdictional waters would be avoided. If impacts on jurisdictional water features cannot be avoided, any required permits would be obtained from CDFW and/or the Regional Water Quality Control Board. These permits would ensure that impacts would be minimized and mitigated. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, the combined impacts of the entire proposed project, including its off-site residential redesignation area, the PG&E substation improvements, the off-site mitigation site, and the solar project itself, related to State- or federally protected wetlands would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts beyond those identified in the previous EIR and no new mitigation measures would be required.***

Impact BIO-3: 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? (*With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.*)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts on native wildlife movement and access to nursery sites that could result from build-out of the Community Plan. Refer to the discussion under Impacts 5.8-1, 5.8-2, 5.8-3, 5.8-4, and 5.8-8 on pages 5.8-24—5.8-42 and 5.8-46—5.8-47 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR anticipated that significant impacts on San Joaquin kit fox and Swainson's hawk would occur because of fragmentation and loss of habitat, disturbance of Swainson's nests and displacement, increased predation risk by domestic dogs, effects from human encroachment, and increased road mortality of kit fox. To mitigate these impacts, the Community Plan EIR identified Mitigation Measures 5.8-1 and 5.8-2 to protect, enhance, and preserve on- and off-site habitat; avoid or minimize impacts on-site during each phase of development in order to preserve San Joaquin kit fox burrows and Swainson's hawk nests; and give kit fox the ability to move through the project site. With implementation of these mitigation measures, the Community Plan EIR concluded that impacts on San Joaquin kit fox and Swainson's hawk would be less than significant. The Community Plan Final EIR proposed additional measures to mitigate impacts on kit fox dispersal and ensure on-site conservation of habitat for kit fox within the on-site kit fox open space corridor. Refer to the discussion under Subsection 3.1.1, Kit Fox Habitat Connectivity and Dispersal, on pages 3-2 through 3-16 of the Community Plan Final EIR, which is incorporated by reference. These measures included amendments to Mitigation Measure 5.8-1 regarding on-site habitat protection and enhancement, off-site habitat preservation, and on-site AMMs. The Community Plan EIR also anticipated potentially significant impacts on California red-legged frog, California tiger salamander, and other non-listed special-status wildlife species that could breed within or travel through the project site. These impacts were similarly due to habitat loss and fragmentation; disturbance and destruction of nests and burrows; disturbance and displacement of individuals; effects from human encroachment, including predation and disease transmission risks; and increased risk of mortality from roadways, among other causes. To mitigate these impacts, the Community Plan EIR identified Mitigation Measures 5.8-3 and 5.8-4 to avoid or minimize on-site impacts on breeding individuals during each project development phase and facilitate the movement of wildlife within the project site. With implementation of these mitigation measures, the Community Plan EIR concluded that impacts on California red-legged frog, California tiger salamander, and other non-listed special-status wildlife species would be less than significant. The Community Plan EIR found that impacts on biological resources on adjacent wildlife management areas and habitat mitigation sites in the project vicinity, including impacts related to the ability of wildlife to access these areas, would be less than significant with implementation of other biological resources mitigation measures. Thus, overall, the Community Plan EIR concluded that impacts on biological resources would be less than significant with mitigation.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan, as well as an associated zone change covering the solar project site, to create an overlay. The overlay would allow for the development of energy generation facilities, communication equipment, electrical distribution/transmission and substation uses, public utility facilities, and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an amendment to the General Plan and Community Plan to redesignate roughly 202.8 acres south of the solar project site from single-family residential use to high-density/medium-density residential use. The proposed off-site residential redesignation would occur on a site that is within the Community Plan area and, therefore, would not involve further development that 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. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. In addition, the only native wildlife nursery sites ICF biologists observed near the residential redesignation area consisted of three active Swainson's hawk nests. Nests were documented within 0.7 mile of the redesignation area during 2022 surveys, with the closest occurring along a redesignation area boundary (Figure 3.4-3).

The proposed off-site residential redesignation would occur on a site that is within the Community Plan area and designated for development under the approved plan. It would serve to preserve but not increase the number of residential units contemplated by the Community Plan EIR. The redesignation, therefore, would not involve further development that would create additional impacts on wetlands. In addition, future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

Construction of the proposed solar project, which would span an area approximately 3 miles wide, may result in a significant impact on San Joaquin kit fox dispersal through the area because of project personnel, lighting, and construction activities. This could cause kit foxes to travel around the solar site, thereby expending more energy and/or placing them closer to I-5 where the potential for being struck by a vehicle is higher. This may also affect kit fox ability to utilize potential den sites within the solar arrays and traverse between denning and hunting areas. However, recent studies of solar farms within the southern San Joaquin Valley and Carrizo Plain over a 3-year period conducted by Cypher et al. (2021 and 2019) found that San Joaquin kit fox may benefit from the protection from predators that solar farms provide if the farms are designed to facilitate kit fox use (e.g., providing boundary fences that are permeable to kit fox but not coyotes, avoiding the use of rodenticide, managing vegetation among the solar arrays, placing escape dens around fence perimeters). In addition, allowing annual grasslands to recolonize the areas under and around the solar arrays, as well as managing vegetation to keep it low,

creates conditions that are favored by kit fox. The studies of solar developments also found that den use patterns were similar between kit fox on solar farm sites and kit fox on reference sites, indicating that access to den sites may not be affected when an appropriate project design is applied.

The wildlife corridors present within the project site provide additional opportunities for kit fox, tule elk, mountain lion, and other wildlife species to move through the project site. The project design at the Wright Solar Park, located approximately 1 mile south of the solar project site, is similar to that of the Las Camas project, with wildlife dispersal corridors (i.e., existing gas and transmission corridors that bisect the development) present within the site. Remote cameras have been placed along wildlife dispersal corridors at the Wright Solar Park, with a focus on documenting San Joaquin kit fox in the area (Figure 3.4-7). The cameras also captured other wildlife, including tule elk, using the corridors. Tule elk have been documented at camera stations 3, 5, and 10 within the dispersal corridor (Figures 3.4-8a-c). Figures 3.4-8a and 3.4-8b, from camera station 3, show tule elk using the middle of the dispersal corridor.

In discussions with CDFW regarding tule elk, the lack of available water in the summer/fall was identified as a potential limiting factor in the area between San Luis Reservoir and Los Banos Reservoir. This lack of water may influence the movement pattern of elk in the area south of SR 152. Discussions with CDFW also indicated that existing fencing within the region may also negatively influence tule elk and other large animal movement patterns in the region.

The presence of project infrastructure, including lighting, and personnel may also discourage the movement of larger and/or more sensitive wildlife species through the site. In addition, the reduction in the general size of this potential movement corridor compared with the size of the previously open grassland land cover type may restrict the movement of medium-size and large mammals, such as tule elk, through the solar project site. Construction of the solar project may also prevent Swainson's hawk from accessing suitable nesting structures within and surrounding the project site through disturbance and the removal of trees that would be suitable for nesting. It could also prevent western burrowing owl from accessing suitable burrows through disturbance or the destruction of burrows.

Construction of the gen-tie line poses only minor interference issues with respect to wildlife movement or access to nursery sites because it would be no more than 0.4 mile long and suspended well above the ground. The main source of impact would be disruptions to bird flight during construction.

The following HCP measures (refer to Subsection 5.3, *Avoidance and Minimization Measures*, of the HCP, for the full list of measures) would avoid or minimize a portion of the potential impacts on San Joaquin kit fox from construction of the solar project: SJKF-1, SJKF-2, SJKF-3, SJKF-5, SJKF-6, SJKF-7, PD-4, GEN-8, GEN-10, GEN-13, and GEN-16. The proposed establishment of a conservation easement on the off-site mitigation site would also minimize a portion of the potential impacts on migratory native wildlife corridors and native wildlife nursery sites because the habitat within the conservation easement is of higher quality and more conducive to movement given the lack of development and movement barriers nearby. However, impacts would remain potentially significant because development of the solar project could still interrupt wildlife movement and disrupt nursery sites. Mitigation Measures BIO-1a through BIO-1f would reduce the remaining impacts on migratory wildlife corridors and native wildlife nursery sites to a less-than-significant level for the reasons stated above under Impact BIO-1. The solar project would implement project-specific Mitigation Measures BIO-1a through BIO-1f instead of Community Plan EIR Mitigation Measures 5.8-1 through 5.8-4 for the reasons stated above under Impact BIO-1.

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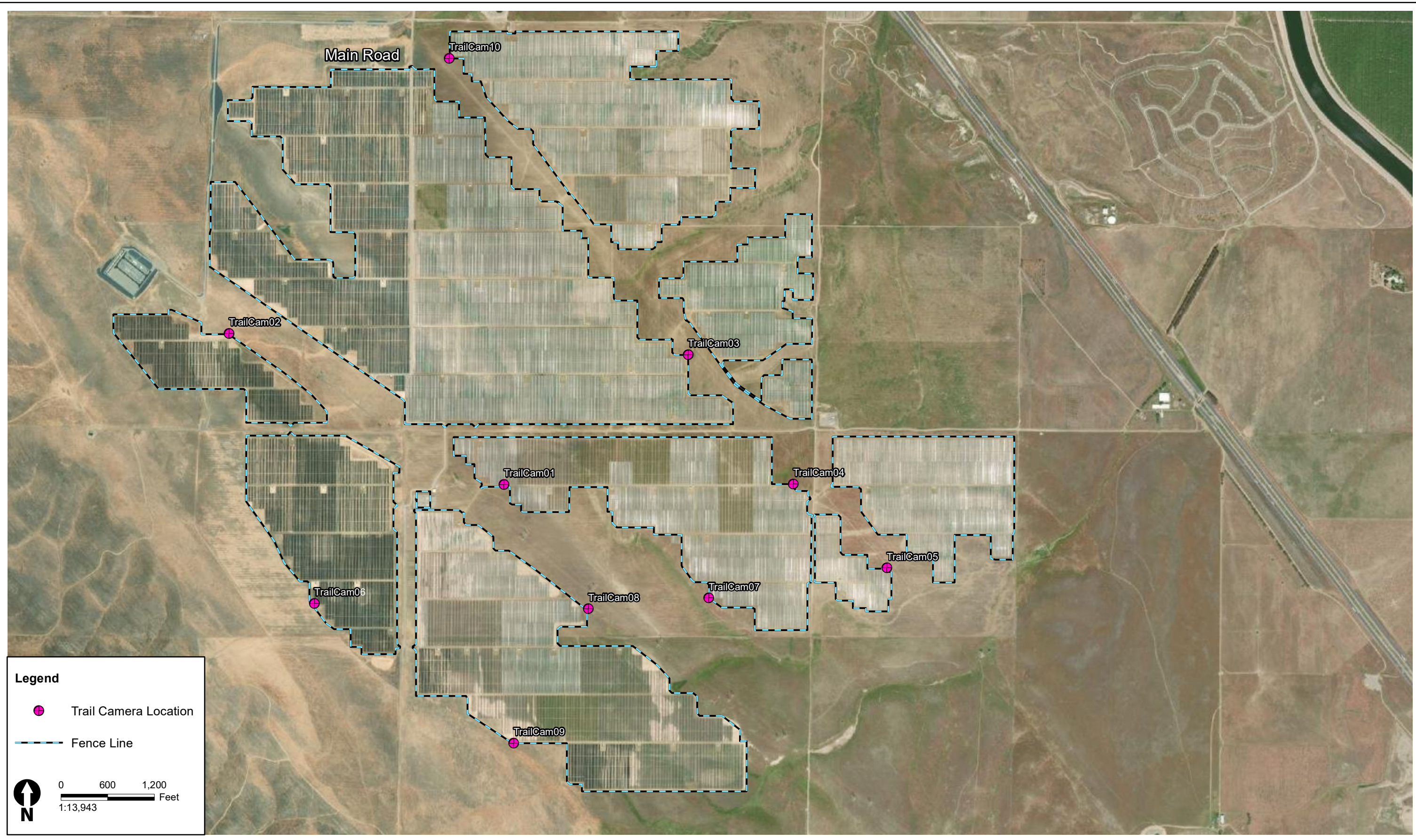
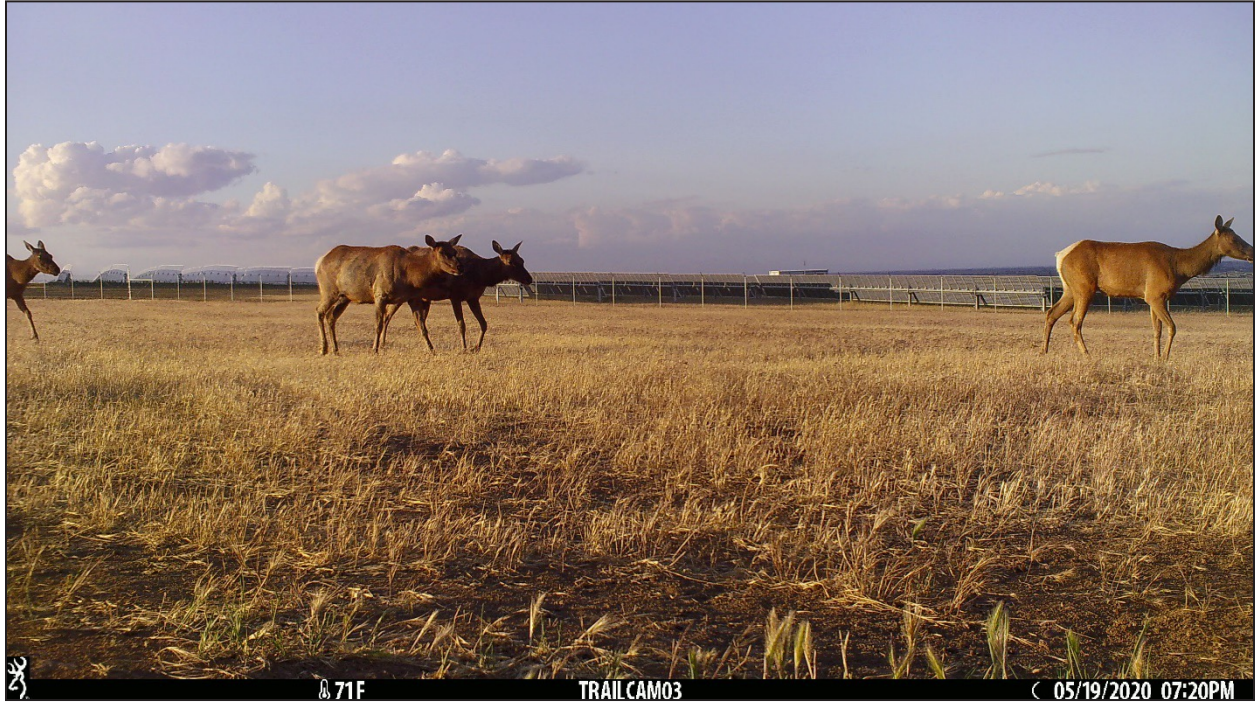
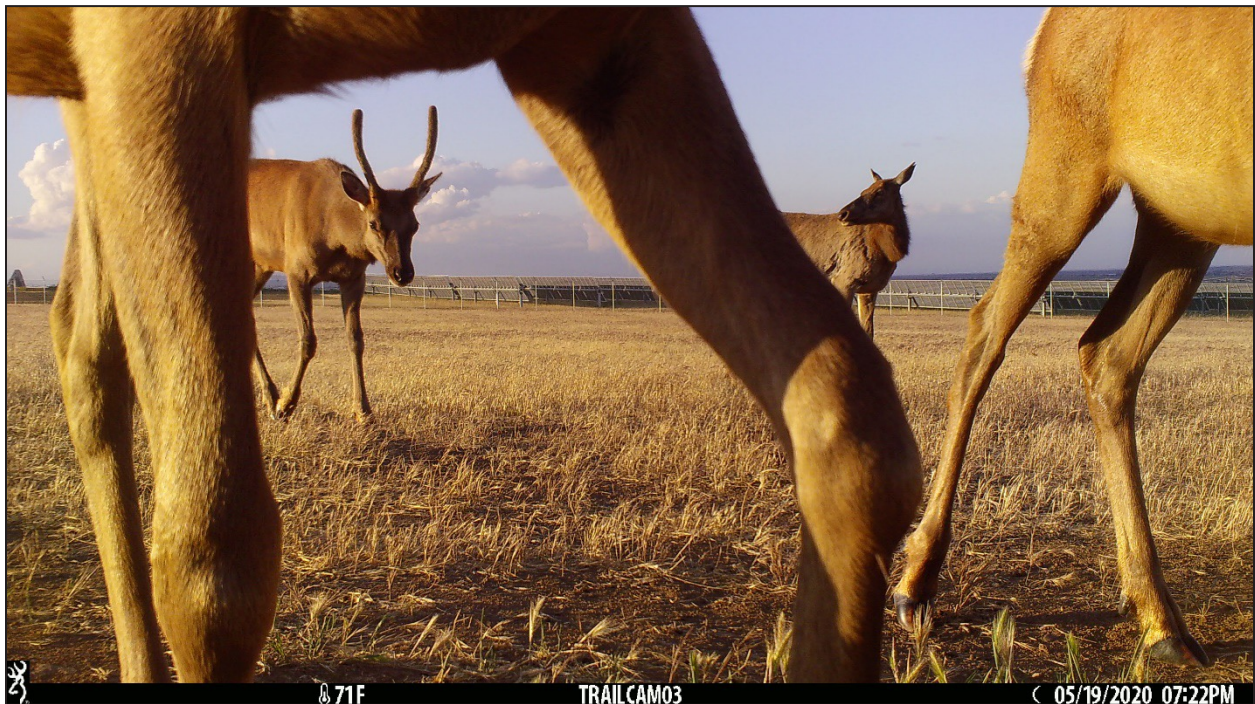


Figure 3.4-7
2022 Wright Solar Remote Camera Station Locations



Camera Station 3 with Tule Elk.

Camera Station is located in the middle of the wildlife dispersal corridor.



Camera Station 3 with Tule Elk.

Camera Station is located in the middle of the wildlife dispersal corridor.

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Figure 3.4-8a
Representative Camera Station Photographs of Tule Elk Identified by the Remote Cameras at the Wright Solar Project Site Wildlife Dispersal Corridor.



Camera Station 3 with Tule Elk.

Camera Station #3 is located in the middle of the wildlife dispersal corridor.



Camera Station 5 with Tule Elk.

Camera Station is located at the South end of the wildlife dispersal corridor. Tule Elk is entering the dispersal corridor and traveling North into the corridor.



Camera Station 10 with Tule Elk.

Camera Station is located at the North end of the wildlife dispersal corridor and the Tule Elk is traveling north.

Tule elk may use the project area for dispersal, calving, and foraging. Mountain lions may also use the project area for foraging and dispersal. The design of the project, with wildlife dispersal corridors bisecting the development areas, provides wildlife an opportunity to move through the project area. The proposed establishment of a conservation easement on the off-site mitigation site would further minimize a portion of the potential impacts on native wildlife movement and native wildlife nursery sites because the habitat within the conservation easement is of higher quality and more conducive to movement, given the lack of nearby development and movement barriers. However, impacts would remain potentially significant because development of the solar project could still interrupt wildlife movement and disrupt nursery sites. Mitigation Measures BIO-1a through BIO-1f would reduce the remaining impacts on wildlife movement and native wildlife nursery sites to a less-than-significant level for the reasons stated above under Impact BIO-1. Mitigation Measure BIO-1g would further reduce impacts on tule elk and mountain lion. The solar project would implement project-specific Mitigation Measures BIO-1a through BIO-1g instead of Community Plan EIR Mitigation Measures 5.8-1 through 5.8-4 for the reasons stated above under Impact BIO-1.

With incorporation of the proposed fencing design discussed in the project description and implementation of the proposed HCP measures, the off-site conservation site, and project-specific Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1d through BIO-1g, this impact would be reduced to a less-than-significant level, consistent with the Community Plan EIR conclusion. Therefore, ***with implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

With respect to interference with native wildlife movement through the area and access to nursery sites, given the project design, the proposed project is not expected to result in any new or substantially more severe significant impacts beyond those identified in the previous EIR. The solar development design would include annual grasslands under the solar array areas, permeable fencing, and travel corridors in the utility easements. These features would be expected to result in a reduced impact compared to build-out of the Community Plan. The following measures would be implemented to enhance and maintain site conditions for potential San Joaquin kit fox movement through the solar project site. These measures would be included in the construction and operational plans developed for the solar project site.

- The fenced areas within the solar arrays shall be revegetated with non-invasive annual grasses and forbs once project construction is completed.
- Vegetation within the solar arrays shall be mowed or grazed at least once a year to keep the vegetation low (less than 12 inches; preferably 3–6 inches in height).
- Vegetation within the gen-tie line corridor shall either be grazed or mowed to keep the vegetation low (less than 12 inches in height).
- Small burrowing mammals shall be allowed to establish within the project site. The developer shall install artificial escape tunnels of a design similar to that presented in Harrison et al. (2011), as specified in AMM SJKF-5 in the HCP. Example den designs are presented in Figure 3.4-9.

The following mitigation measure is recommended to reduce impacts on tule elk and mountain lion movement to a less-than-significant level.

Mitigation Measure BIO-1g: Avoid and minimize impacts on Tule Elk and Mountain Lions

To avoid and minimize the impact on tule elk and mountain lion movement in the project area, the project applicant shall coordinate with CDFW to implement measures that benefit tule elk and mountain lion. These may include the measures described below. Measures agreed upon by CDFW and the project applicant shall be initiated prior to the completion of construction activities, as verified by the Merced County Department of Public Works prior to the issuance of a construction permit.

- Identify areas of fencing in the project region that may act as an impediment to the north/south movement of large animals like tule elk and mountain lions. Where feasible, fencing that creates a barrier to movement may be removed or reconstructed such that large animals, including tule elk and mountain lions, can cross these areas unimpeded.
- Determine the appropriateness and location of one or two water guzzlers within the project region that will provide a source of drinking water for wildlife, including tule elk and mountain lions.
- Conduct or fund additional studies on wildlife connectivity and movement patterns along SR 152 within Merced County.

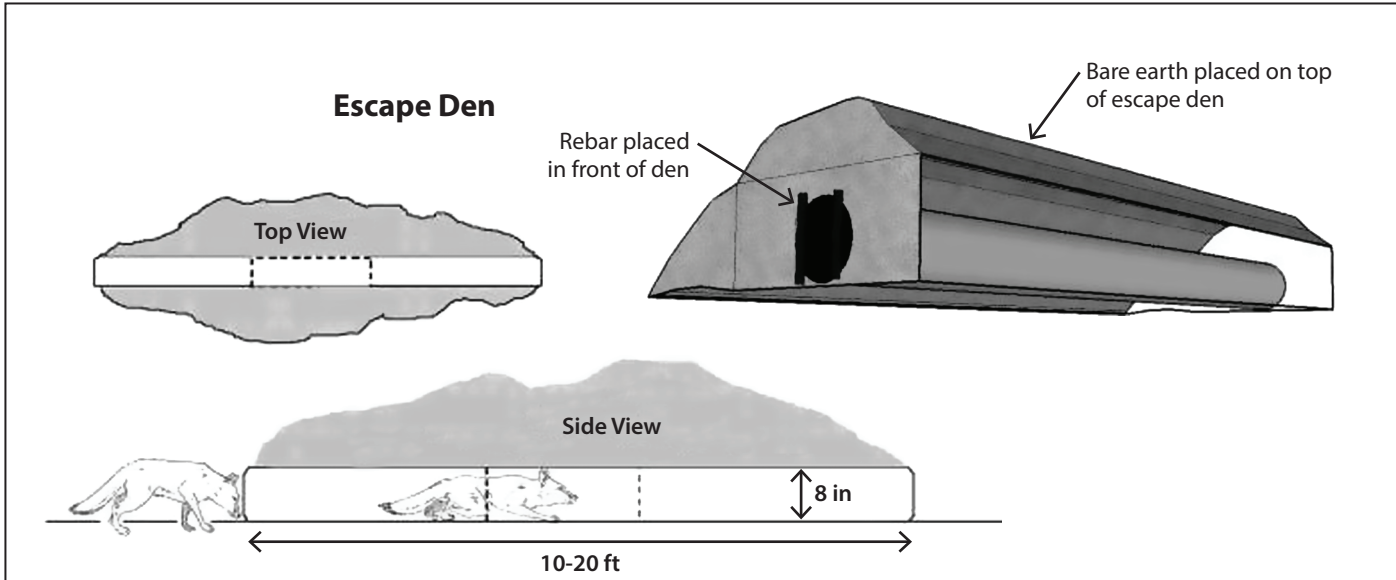
Operation

Operation of the solar project poses risks to native wildlife movement and nursery site access similar to those discussed for construction. Potential effects from project lighting would be avoided and minimized by HCP measure PD-4. Potential effects on San Joaquin kit fox burrows would be avoided and minimized by HCP measures SJKF-1, SJKF-2, SJKF-3, SJKF-6, SJKF-7, GEN-8, GEN-10, GEN-13, and GEN-16.

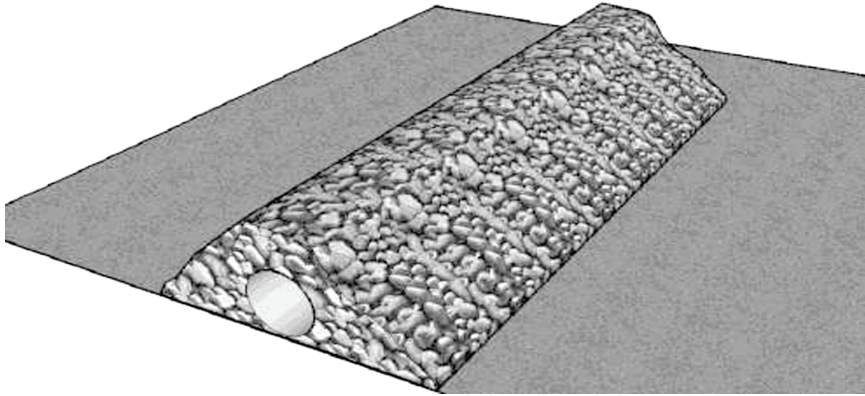
The proposed project would retain existing permeability through the corridors for some wildlife, as discussed in Chapter 2, *Project Description*, Section 2.3.2. The fence design would facilitate movement of kit fox and animals of a similar size or smaller through the solar arrays and into and out of the solar project site while restricting access into the site by larger mammals that may predate upon kit fox, such as coyotes. All fencing would have an appropriately sized gap between the bottom of the fence and the ground. The size of the gap would be dictated by the solar project's HCP and CESA Section 2081 incidental take permit, subject to approval by USFWS and CDFW, respectively. The bottom of the fence fabric would be knuckled (i.e., wrapped back to form a smooth edge) to protect wildlife that pass under the fence.

The proposed HCP for the solar project includes a long-term monitoring component to understand the continued presence of kit fox at the project site after the solar facility is constructed. The project applicant would establish fixed camera monitoring stations along the perimeter fence lines of the solar project site and within the solar arrays themselves to detect kit fox. Camera monitoring would occur continuously between February 15 and August 15 for 5 years after the solar infrastructure is installed and operational.

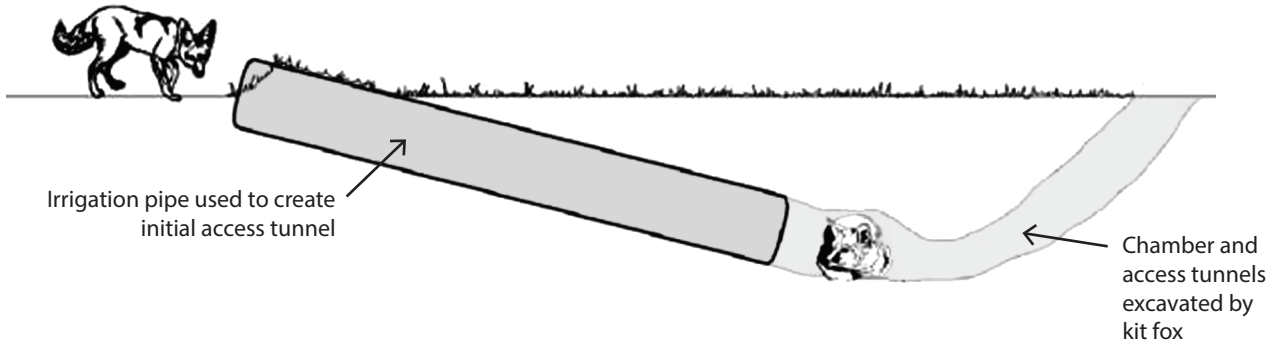
Proposed establishment of a conservation easement on the off-site mitigation site would also minimize a portion of the potential impacts on native wildlife corridors and native wildlife nursery sites because the habitat within the conservation easement is of higher quality and more conducive to movement given the lack of development and movement barriers nearby. Notwithstanding, solar project features and lighting have the potential to disturb wildlife movement through the project site. The overhead transmission lines, such as the gen-tie line, present a collision and electrocution risk for birds such as



Schematic and field example of surface escape dens for kit foxes (Harrison et al. 2011)



Heavy substrate such as rocks can be used to cover escape dens (Harrison et al. 2011)



Alternative den design using a single length of irrigation pipe (Harrison et al. 2011)

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Figure 3.4-9
Typical San Joaquin Kit Fox Escape Den Design

Swainson's hawk, especially during periods with poor visibility. Vegetation maintenance around the solar arrays could result in the disturbance or destruction for badger and burrowing owl, which could lead to burrow abandonment and death of the young and/or adults present within burrows. For the reasons stated above under the analysis of Impact BIO-1, with implementation of project-specific Mitigation Measures BIO-1c, BIO-1e, and BIO-1f, impacts from solar project operation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Decommissioning

Decommissioning of the solar project would involve a substantial amount of disturbance, which could be equivalent to the disturbance that occurred during construction, resulting in nest and burrow abandonment and failure as well as direct injury or mortality for wildlife. For the reasons stated above under the analysis of Impact BIO-1, with implementation of project-specific Mitigation Measures BIO-1a through BIO-1d and BIO-1g, impacts from solar project decommissioning would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Impacts related to wildlife movement resulting from the portion of the solar project site located outside of the Community Plan boundary are included in the analysis above.

Off-Site Mitigation Site

The project does not propose any development within the off-site mitigation site. The off-site mitigation site would be set aside in perpetuity for San Joaquin kit fox and other covered species, as necessary. The site would continue to be grazed and mowed. Targeted invasive plant management activities would be necessary to prevent invasion by pest plant species. Therefore, establishment of the off-site mitigation site, including maintenance of the existing perimeter fence, would not substantially interfere 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. Therefore, impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The PG&E substation improvements are not expected to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. This is due primarily to the proximity of the improvement area to the existing substation, as well as its orientation, such that the existing substation borders the full extent of the improvement area to both the west and north. In addition, no special-status wildlife nursery sites were observed within the substation improvement area during ICF's 2022 survey of the site. Should nursery sites become established during the course of substation improvements, the following PG&E AMMs/BMPs would be implemented, as discussed in Subsection 2.3.3 in Chapter 2, *Project Description*, allowing wildlife to continue to access those sites and facilitating wildlife movement through the improvement area:

- **PG&E AMM/BMP-19: Conduct Pre-Construction Survey(s) for Special-Status Species and Sensitive Resource Areas.** Biologists will conduct pre-construction survey(s) for special-status species and sensitive resource areas immediately prior to construction activities within suitable aquatic and upland habitat for special-status species.
- **PG&E AMM/BMP-20: Avoid Impacts on Nesting Birds.** Biologists will conduct nest detection surveys prior to project work scheduled during the nesting season and establish measures to avoid disturbance to nesting birds as needed.
- **PG&E AMM/BMP-21: Biological Monitoring.** Biologists will monitor initial ground-disturbing activities in and adjacent to sensitive habitat areas to ensure compliance with BMPs and AMMs, unless the area has been protected by barrier fencing to protect sensitive biological resources and has been cleared by the biologists.
- **PG&E AMM/BMP-22: Special-Status Species Protection.** Project areas will be inspected each workday for wildlife prior to construction activities within areas suitable for special-status species. In addition, the project area will be cleared of debris and secured to avoid impeding wildlife movement.
- **PG&E AMM/BMP-23. San Joaquin Kit Fox and Blunt-Nosed Leopard Lizard Protection.** Species-specific procedures (i.e., establishing exclusion zones) will be followed to avoid impacts on San Joaquin kit fox and blunt-nosed leopard lizard in areas with evidence that those species may be present.
- **PG&E AMM/BMP-24: Dead or Injured Special-Status Wildlife.** Construction work will stop in the immediate vicinity of any dead or injured special-status wildlife or birds protected by the MBTA, pending coordination with the biologists and appropriate resource agency.

These AMMs/BMPs would preserve the ability of wildlife to move through the improvement area by requiring regular monitoring of open trenches, excavations, and pipes measuring 4 inches or more in diameter to avoid entrapment or mortality of wildlife, ceasing construction activity if a listed animal is encountered (until the animal has safely moved out of the area on its own or with assistance from a qualified biologist), and monitoring for dead or injured special-status wildlife. These measures would also allow wildlife to continue accessing nursery sites with implementation of no-activity zones around burrows and nests. Therefore, with application of these AMMs/BMPs by PG&E, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

With implementation of the project-specific mitigation described above, the combined impacts of the entire proposed project, including its off-site residential redesignation area, PG&E substation improvements, off-site mitigation site, and the solar project itself, would be less than significant with implementation of project-specific mitigation, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts beyond those identified in the previous EIR would occur.***

Impact BIO-4: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential for conflicts with *2030 Merced County General Plan* policies for protecting biological resources that could result from build-out of the Community Plan. Refer to the discussion under Impact 5.7-7 on pages 5.8-45—5.8-46 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR anticipated that the potential for Community Plan build-out to conflict with the General Plan would be less than significant because the Community Plan was developed in alignment with the General Plan's objectives and policies with respect to protecting sensitive biological resources from the impacts of proposed urban developments. Furthermore, the Community Plan EIR proposed mitigation measures to avoid or mitigate impacts on biological resources. Therefore, the Community Plan EIR concluded that impacts on biological resources due to conflicts with protective policies would be less than significant.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create an overlay. The overlay would allow for the development of energy generation facilities, communication equipment, electrical distribution/transmission and substation uses, public utility facilities, and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would require an amendment to the General Plan and Community Plan to redesignate roughly 202.8 acres south of the solar project site from single-family residential use to high-density/medium-density residential use. The proposed off-site residential redesignation area would occur on a site that is within the Community Plan area. It would not increase the amount of development contemplated under Community Plan EIR and, therefore, would not involve further development that would conflict with the policies of the General Plan. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. **No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.**

Construction

Development of the proposed solar project would be subject to the policies of the *2030 Merced County General Plan* outlined in the *Regulatory Setting* of this section, policies that the proposed mitigation measures for biological resources support. Therefore, construction of the proposed solar project would not conflict with General Plan policies. Impacts from solar project construction would be less than significant, consistent with the Community Plan EIR conclusion. **No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.**

Operation

Development of the proposed solar project would be subject to the policies of the *2030 Merced County General Plan* outlined in the *Regulatory Setting* of this section, policies that the proposed mitigation measures for biological resources support. Therefore, operation of the proposed solar project would not conflict with General Plan policies. Impacts from solar project operation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Development of the proposed solar project would be subject to the policies of the *2030 Merced County General Plan* outlined in the *Regulatory Setting* of this section, policies that the proposed mitigation measures for biological resources support. Therefore, decommissioning of the proposed solar project would not conflict with General Plan policies. Impacts from solar project decommissioning would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Impacts resulting from the portion of the solar project site outside of the Community Plan boundary are included in the analysis above.

Off-Site Mitigation Site

Establishment of the off-site mitigation site would be subject to the policies of the 2030 Merced County General Plan outlined in the *Regulatory Setting* of this section, policies that the proposed mitigation measures for biological resources support. As discussed in Chapter 2, *Project Description*, a conservation easement would be established for the designation and management of an off-site mitigation site in perpetuity for the benefit of San Joaquin kit fox and other covered species, as necessary. Management of the mitigation site would be in accordance with the proposed project's proposed HCP. Therefore, designation and management of the off-site mitigation lands would not conflict with relevant policies. Impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Currently, no locally adopted policies or ordinances for the protection of biological resources apply to the PG&E substation improvements area. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, the combined impacts of the entire proposed project, including its off-site residential redesignation area, the PG&E substation improvements, the off-site mitigation site, and the solar project itself, would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts beyond those identified in the previous EIR, and no new mitigation measures would be required.***

Impact BIO-5: Conflict with the provisions of an adopted HCP, natural community conservation plan, or other approved local, regional, or State HCP? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

The incidental take permit associated with the Santa Nella HCP (refer to Subsection 3.4.1, *Existing Conditions*) expired in 2015. There is currently no adopted HCP, natural community conservation plan, or other local, regional, or State HCP that applies to the solar project site. The proposed HCP for this project is in review by USFWS.

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential for conflicts with the Santa Nella HCP that could result from build-out of the Community Plan. Refer to the discussion under Impact 5.7-7 on pages 5.8-45—5.8-46 of the Community Plan EIR, which is incorporated by reference. The incidental take permit associated with the Santa Nella HCP (refer to Subsection 3.4.1, *Existing Conditions*) expired in 2015. There is currently no adopted HCP, natural community conservation plan, or other local, regional, or State HCP that applies to the solar project site. The Community Plan EIR anticipated that the potential for Community Plan build-out to conflict with the Santa Nella HCP would be less than significant because the mitigation measures already proposed by the Community Plan EIR would mitigate impacts on San Joaquin kit fox and kit fox habitat. Therefore, the Community Plan EIR concluded that impacts on biological resources due to conflicts with the Santa Nella HCP would be less than significant.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create an overlay. The overlay would allow for the development of energy generation facilities, communication equipment, electrical distribution/transmission and substation uses, public utility facilities, and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would require an amendment to the General Plan and Community Plan to redesignate roughly 202.8 acres south of the solar project site from single-family residential use to high-density/medium-density residential use. The proposed off-site residential redesignation area would occur on a site that is within the Community Plan area and designated for development under the approved plan. It would serve to preserve but not increase the overall number of residential units contemplated by the Community Plan EIR; the redesignation, therefore, would not involve further development that would create additional impacts. In addition, future development

within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. Therefore, this action would not contribute any change to the less-than-significant conclusion made in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

The incidental take permit associated with the Santa Nella HCP (refer to Subsection 3.4.1, *Existing Conditions*) expired in 2015. There is currently no adopted HCP, natural community conservation plan, or other local, regional, or State HCP that applies to the proposed solar project site. Therefore, solar project construction would have ***no impact*** and would not contribute any change to the less-than-significant conclusion made in the Community Plan EIR.

Operation

The incidental take permit associated with the Santa Nella HCP (refer to Subsection 3.4.1, *Existing Conditions*) expired in 2015. There is currently no adopted HCP, natural community conservation plan, or other local, regional, or State HCP that applies to the proposed solar project site. Therefore, solar project operation would have ***no impact*** and would not contribute any change to the less-than-significant conclusion made in the Community Plan EIR.

Decommissioning

The incidental take permit associated with the Santa Nella HCP (refer to Subsection 3.4.1, *Existing Conditions*) expired in 2015. There is currently no adopted HCP, natural community conservation plan, or other local, regional, or State HCP that applies to the proposed solar project site. Therefore, solar project decommissioning would have ***no impact*** and would not contribute any change to the less-than-significant conclusion made in the Community Plan EIR.

Additional Proposed Development Outside of the Community Plan

Solar Project

Impacts associated with the portion of the solar project site outside of the Community Plan boundary are included in the analysis above.

Off-Site Mitigation Site

There is currently no adopted HCP, natural community conservation plan, or other local, regional, or State HCP that applies to the off-site mitigation site. An HCP for the mitigation site is in development, ensuring that the site will be managed in perpetuity for the benefit of San Joaquin kit fox and other covered species, as necessary, in accordance with the requirements of the project's incidental take permit application to CDFW. Therefore, the off-site mitigation site would not contribute any change to the less-than-significant conclusion made in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

There is currently no adopted HCP, natural community conservation plan, or other local, regional, or State HCP that applies to the PG&E improvement area. Therefore, the improvements would not contribute any change to the less-than-significant conclusion made in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, the combined impacts of the entire proposed project, including its off-site residential redesignation, the PG&E substation improvements, the off-site mitigation site, and the solar project itself, would not contribute any change to the less-than-significant conclusion made in the Community Plan EIR. ***No new or substantially more severe significant impacts, beyond those identified in the previous EIR and no new mitigation measures would be required.***

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3.5 Cultural Resources

This section identifies and evaluates the project's potential impacts on cultural resources, including prehistoric (i.e., Native American) and historical sites. This section also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments (off-site residential redesignation); and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site residential redesignation are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Relevant technical documentation used in this analysis includes:

- *Cultural Resources Inventory Report for the Las Camas Solar Project*, Merced County, California (ICF 2024) (Appendix 3.5-1)

No questions or concerns related to cultural resources were raised in response to the Notice of Preparation (NOP) (Appendix 1-2). A letter from the Native American Heritage Commission (NAHC) was received. The letter describes statutory requirements for tribal outreach and does not include specific questions or concerns about the proposed project. Refer to Section 3.18, *Tribal Cultural Resources*, for an analysis of the proposed project's potential impacts on tribal cultural resources.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.5.1 Existing Conditions

Environmental Setting

Regional Setting

The project site is approximately two miles south of the Community of Santa Nella and five miles west of the city of Los Banos in western Merced County, California. The project site is on the San Luis Dam and Volta U.S. Geological Survey (USGS) 7.5-minute quadrangles.

Solar Project Site

The approximately 1,740-acre solar project site is bordered by State Route (SR) 33 to the north, Interstate 5 to the east, and privately owned farmland and the Billy Wright Landfill to the south and west. Billy Wright Road intersects the southeastern most portion of the solar project site.

The solar project site has a history of disturbance, predominantly from dry farming and grazing. The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming nonnative annual grassland. Portions of the solar project site are currently used for grazing and dry farming. Similar to the solar project site, the surrounding lands to the west and southwest are also grazed nonnative annual grassland.

PG&E Substation Improvements

The approximately 47-acre PG&E substation site contains an approximately 10-acre improvement area which is part of the project and is analyzed below. The environmental character and history of the PG&E substation improvement area are similar to those of the solar project site, described above. Specifically, historic maps and aerial imagery indicate that the area was used for agricultural purposes prior to construction of the substation.

Off-Site Mitigation Site

The off-site mitigation site is situated close to the eastern and southern edges of Los Banos Reservoir. Similar to the solar project site, elevations range from 100 feet above sea level at the lowest point to 500 feet at the highest point. The environmental character and history of the off-site mitigation site are substantially similar to those of the solar project site, described above. The site is dominated by grazed nonnative annual grassland and zoned for agricultural use.

Off-Site Residential Redesignation Area

The off-site residential redesignation area abuts the southeast portion of the solar project site. The environmental setting at the off-site residential redesignation area is described on page 3-1 in Chapter 3 of the Community Plan EIR and is incorporated by reference. As described in that discussion, the off-site residential redesignation area is primarily used for active and fallowed agricultural production (e.g., alfalfa, hay, oats, vineyards, orchards) and grazing land for cattle and sheep. This discussion accurately describes the current existing setting at the residential redesignation area.

Cultural Setting

The following setting and cultural context discussions focus on the regional patterns of development in vicinity of the project site, and specific resources in the project site.

Prehistory

Archaeological data to date indicates that humans have occupied the San Joaquin Valley (Valley) since at least 11,500 years before present (BP). Early inhabitants of the area practiced a mobile hunter-gatherer lifestyle that focused on big game. Archaeological sites associated with these initial inhabitants consist mainly of large stone basally thinned and fluted projectile points and butchered large mammal bone. Material from these early sites indicates that occupational sequences were brief and associated with small groups of people. This big-game hunting model appears to have persisted until approximately 8,550 BP, at which point plant resources became a greater component of the diet and regional trade networks became increasingly complex and wide-ranging (Rosenthal et al. 2007:151).

The Archaic Period is the term used for the period of human occupation in California following the big-game hunting-focused model discussed above. Spanning from approximately 8,550 BP to 1,000 BP, the Archaic Period is characterized by a more sedentary lifestyle, use of plants in the diet, medium and small game hunting, and complexity and extent of trade networks. The shift to greater plant use is evident by the substantial increase and widespread appearance of ground stone tools, such as manos and metates—these implements were used to process seeds, especially acorns, for consumption (Rosenthal et al. 2007:151–157; Moratto 2004:185–207).

Typically larger and with longer occupational sequences when compared to their predecessors, Lower (8,550–5,550 BP) and Middle (5,550–2,550 BP) Archaic sites in the Valley are typically located along valley floor rivers, and contain trade goods, specialized tools, and food items (plants and animal remains) representing year-round collection and hunting. A high degree of regional morphological variability is seen in projectile points from Lower and Middle Archaic sites, with local source material emphasized, but some exotic obsidian also used. Mortuary practices become increasingly developed during these periods; extended burials are by far the most common type during these periods, and grave goods are also increasingly common (Rosenthal et al. 2007:151–155; Moratto 2004:185–207; Chartkoff and Chartkoff 1984:74–97).

The archaeological record from the Valley dating to the Upper Archaic (2,550–1,000 BP) becomes much more complex than that of earlier periods. The Upper Archaic was a period of continual specialization in subsistence practices, stemming from adaptations to local environments and those resources available therein. During the period, trade networks expanded and became more complex, evident from the widespread appearance of distinct shell bead types, acquired from coastal peoples, throughout the Valley. Also, well-made artifacts, such as beads and charmstones, indicate that social stratification and craft specialization were increasing during the period (Rosenthal et al. 2007:155–157; Moratto 2004:185–207).

A large number of archaeological sites are known within the Central Valley which date from approximately 1,000 BP to Euro-American contact. A major development of the period was the introduction of the bow and arrow, replacing the atlatl and dart, sometime between 1,100 BP and 800 BP. Small residential sites along streams and rivers became abundant, as did continued diversification in subsistence practices. Acorns and seeds were a staple, supplemented by a large variety of terrestrial mammals, waterfowl, fishes, berries, among other foods. As expected with the transition to the arrow, projectile point forms from this period are smaller than earlier types, and are made from a wide range of stone types, and commonly from exotic obsidian (Rosenthal et al. 2007:157–159; Moratto 2004:192–193, 211–214).

Ethnographic Setting

Please refer to the *Existing Conditions* discussion in Section 3.18, *Tribal Cultural Resources*, of this EIR for a description of this topic.

Historic Setting

Regional Development

Juan Rodriguez Cabrillo, sailing on behalf of Spain, is thought to have been the first European to have visited California when he landed in San Diego in 1542. Other than scattered coastal landings, European contact with Native Americans was rare until the latter part of the eighteenth century. Setting off from San Diego in 1769, a Spanish expedition led by Gaspar de Portolá travelled the California coast to as far

north as Monterey. This led to the Spanish establishing Catholic missions throughout California, though none in the Central Valley. The purpose of the missions was to convert Native peoples and firmly impose Spanish control over the region (Castillo 1978:99–104; Starr 2005:22–23, 32–37).

After its independence from Spain, in 1821, Mexico assumed control over California. Throughout the 1830s, Mexico closed the missions and sold former mission lands and previously unoccupied (by Euro-Americans) lands to Mexicans for cattle ranching. This led to further displacement of Native Americans throughout the region (Starr 2005:49–50; Castillo 1978:105).

The 1826–1827 fur-trapping expedition led by Jedediah Smith brought the earliest Anglo-Americans to the Central Valley. Another notable expedition into the area was that of United States Army General John C. Fremont, passing through the Valley in 1844. In 1848, the Treaty of Guadalupe ended the Mexican-American War, and transferred ownership of California from Mexico to the United States. Gold was discovered in Northern California the same year and brought a flood of hopeful miners and other settlers. Farming and cattle ranching quickly increased throughout the Valley in order to fulfill the needs of these new settlers (Starr 2005:57, 74, 78–83).

Merced County was established in 1855 after the division of Mariposa County into 10 separate counties (Parker 1881:86). In 1870, construction of the Stockton and Visalia Division of the Central Pacific Railroad began, branching off from Lathrop and running through the center of Merced County. The railroad line went through the city of Merced, which quickly grew and became the County seat the same year as the railroad's installation. The city centered around agricultural activities and cattle ranching. As early as the 1860s, irrigation projects had been carried out in order to supply the arid area with water from the region's drainages; wheat, fruits, nuts, and alfalfa were among the most important crops grown in the area (Parker 1881:86, 98, 170–180). Much more extensive and reliable irrigation systems came in the mid-twentieth century with the Central Valley Project and the California Water Project. The California Aqueduct flows in the project vicinity to the east (Kahrl 1978:21, 25, 46–57).

Regulatory Setting

Federal

Section 106 of the National Historic Preservation Act

Section 106 of the National Historic Preservation Act requires federal agencies, or those they fund or permit, to consider the effects of their actions on cultural resources that may be eligible for listing or that are listed in the National Register of Historic Places (NRHP). Such resources are referred to as historic properties.

To determine whether an undertaking could affect historic properties, cultural resources (i.e., archaeological, historical, and architectural properties) must be identified and evaluated to determine if they are eligible for listing in the NRHP. The NRHP eligibility criteria are presented in this section.

Although compliance with Section 106 is the responsibility of the lead federal agency, the work necessary to comply may be undertaken by others.

The Section 106 process entails six basic steps:

- Initiate consultation and public involvement.
- Identify and evaluate historic properties.
- Assess effects of the project on historic properties.

- Consult with the State Historic Preservation Officer (SHPO) regarding adverse effects on historic properties, resulting in a memorandum of agreement.
- Submit the memorandum of agreement to the Advisory Council on Historic Preservation.
- Proceed in accordance with the memorandum of agreement.

National Register of Historic Places Eligibility Criteria

American history, architecture, archaeology, and culture are present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

- A. Are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. Are associated with the lives of persons significant in our past; or
- 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 value, 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.

Eligibility for listing in the NRHP requires that a resource not only meet one of these four criteria, but also that it possesses integrity (36 CFR 60.4). Integrity is the ability of a property to convey its significance. The evaluation of a resource's integrity must be grounded in an understanding of that resource's physical characteristics and how those characteristics relate to its significance. Specifically, integrity consists of seven possible aspects: integrity of location, setting, design, materials, workmanship, feeling, and association.

State

California Environmental Quality Act

CEQA requires a lead state agency to consider the impacts of a project on historical resources. Under State CEQA Guidelines Section 15064.5(a), the following resources are considered historical resources:

1. A resource listed in, or determined to be eligible by, the State Historical Resources Commission for listing in the California Register of Historical Resources (CRHR) (Public Resources Code [PRC] Section 5024.1) will be presumed to be historically significant.
2. A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g), will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript that 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 may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

Section 15064.5(b) of the State CEQA Guidelines specifies that project effects that would “cause a substantial adverse change in the significance of an historical resource” are significant effects on the environment. The thresholds for substantial adverse change are discussed further in Section 3.5.2.

CEQA also requires lead agencies to consider whether projects will affect unique archaeological resources. PRC Section 21083.2, subdivision (g), states that 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:

- It contains information needed to answer important scientific research questions, and there is a demonstrable public interest in that information.
- It has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- It is directly associated with a scientifically recognized important prehistoric or historic event or person.

See Chapter 3.18, *Tribal Cultural Resources*, for information regarding the regulations and policies governing tribal cultural resources.

California Register of Historical Resources

The CRHR is a listing of state of California resources that are significant within the context of California’s history. The CRHR is a statewide program with a scope and criteria for inclusion similar to those used for the NRHP. Certain properties included in other registers are automatically considered eligible for inclusion in the CRHR. This includes all properties in California that are listed in or formally determined eligible for listing in the NRHP, and properties designated under qualified municipal or county ordinances.

A historical resource must be historically significant at the local, state, or national level under one or more of the significance criteria below (PRC Section 5024.1) to be included in the CRHR:

1. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
2. It is associated with the lives of persons important to local, California, or national history.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Similar to the NRHP, a resource must meet one of the above significance criteria and retain integrity. The CRHR uses the same seven aspects of integrity as the NRHP.

California Native American Historical, Cultural, and Sacred Site Act

The California Native American Historical, Cultural, and Sacred Sites Act applies to both State and private lands. The act requires that upon discovery of human remains, construction or excavation activity must cease, and the County coroner must be notified. If the remains are of a Native

American, the coroner must notify the Native American Heritage Commission (NAHC), which notifies and has the authority to designate the Most Likely Descendant (MLD) of the deceased. The act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Health and Safety Code, Sections 7052 and 7050.5

Section 7052 of the Health and Safety Code states that the disturbance of Native American cemeteries is a felony. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If they are determined to be those of a Native American, the coroner must contact the NAHC.

Public Resources Code, Section 5097

PRC Section 5097 specifies the procedures to be followed if human remains are unexpectedly discovered on nonfederal land and provides the legal implications such as fines, imprisonment, and/or restitution, if this is carried out knowingly.

Local and Regional

Merced County General Plan

The *2030 Merced County General Plan, Recreation and Cultural Resources Element* provides a summary regarding archaeological, historic, and Native American Cultural resources in the County. The element also provides the following goals related to cultural resources:

Goal RCR-2 Protect and preserve the cultural, archaeological, and historic resources of the county

Policies under Goal RCR-2.

- **Policy RCR-2.1:** Archaeological Site and Artifact Protection (RDR) Require development projects that affect archaeological sites and artifacts to avoid disturbance or damage to these sites.
- **Policy RCR-2.2:** Historical Area Preservation (RDR) Support the preservation of historical structures and areas, particularly those listed on the National Registrar of Historic Places and California Registrar of Historic Places
- **Policy RCR-2.3:** Architectural Character Preservation (RDR/IGC) Require that the original architectural character of significant State- and Federally-listed historic structures be maintained in compliance with preservation standards and regulations.
- **Policy RCR-2.4:** Park and Open Space Historic Resource Preservation (RDR) Require the preservation of historic resources located in parks and publicly-owned open space areas.
- **Policy RCR-2.5:** Human Remains Discovery (RDR) Require that, in the event of the discovery of human remains on any project construction site, all work in the vicinity of the find will cease and the County Coroner and Native American Heritage Commission will be notified.

- **Policy RCR-2.6:** Historic Buildings and Areas (RDR) Identify buildings and areas with special and recognized historic, architectural, or aesthetic value to be preserved and rehabilitated during the Community Plan update process. New development should respect architecturally and historically significant buildings and areas, and conform to the current Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, and incorporate adaptive reuse practices, where feasible, to preserve the County's historical heritage and rural character.
- **Policy RCR-2.7:** Historic Preservation (RDR) Support the efforts of local preservation groups and community property owners to preserve or improve building facades and exteriors consistent with the historic and visual character of the specific building or area.
- **Policy RCR-2.8:** Historical Preservation Area/Site Designations (RDR) Allow sites of historical and archaeological significance to be designated as historical preservation areas or sites during the Community Planning process or on individual sites in rural areas.
- **Policy RCR-2.9:** Historical and Cultural Resources Investigation, Assessment, and Mitigation Guidelines (RDR/MPSP) Establish and adopt mandatory guidelines for use during the environmental review processes for private and public projects to identify and protect historical, cultural, archaeological, and paleontological resources, and unique geological features.
- **Policy RCR-2.10:** Tribal Consultation (RDR/MPSP/IGC) Consult with Native American tribes regarding proposed development projects and land use policy changes consistent with Planning and Zoning Law at Government Code Section 65351, and the OPR Tribal Consultation Guidelines (2005).

3.5.2 Environmental Impacts

This section describes the proposed project's potential impacts on cultural resources. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary. A detailed account of the methods and results used for this study can be found in the Cultural Resources Inventory Report in Appendix 3.5-1 (ICF 2024).

Methods for Analysis

Background Research

Records Search

On May 21, 2021, staff at the California Historical Resources Information System's (CHRIS) Central California Information Center (CCIC) conducted a records search and literature review for the project area and a 0.25-mile buffer surrounding the project area. The records search and literature review at the CCIC provide documentation for previously reported archaeological, historic, and architectural resources within the study area is useful for developing a context to frame assessments of resource significance. The May 2021 records search did not include the off-site mitigation site.

The May 2021 records search results indicated that 18 previous cultural resources studies have been conducted within the project area. Updated pedestrian cultural resources surveys were also performed.

The CCIC indicated that three cultural resources, all of them from prehistoric (i.e., Native American) origins, have been recorded within the 0.25-mile buffer outside the project area. No previously recorded cultural resources were identified within the project area. The previously recorded resources consist of one prehistoric lithic scatter and two isolated historic debris scatters.

On October 10, 2023, staff at the CCIC conducted a supplemental records search and literature review for the off-site mitigation site. The records search indicated that four previous studies have been conducted within the last 10 years at the off-site mitigation site. The studies are clustered in the northern portion of the off-site mitigation site. No previous studies have been conducted in the southern half of the off-site mitigation site.

The CCIC indicated that 22 previously recorded cultural resources occur within the off-site mitigation site. All of the resources are concentrated in the northern half of the off-site mitigation site. Of these 22 resources, 20 are prehistoric and two are historic-era. Of the 20 prehistoric resources, 16 are isolated artifacts, one is an extensive habitation site with multiple features and human remains present, and two are artifact scatters. The two historic-era resources include a transmission line and a road. There is no indication that any of the resources have been evaluated for significance.

Other Research

Additional sources of information, such as historic maps from the U.S. Geological Survey and General Land Office, were selectively reviewed to determine areas that have a high potential for the presence of historic and prehistoric sites, and to gather historical data. The following sources were reviewed:

- National Park Service's National Register of Historic Places Digital Archive website (NPS 2021)
- Office of Historic Preservation's Californian historical Landmarks website (OHP 2021)
- The National Map's Historical Topographic Map Collection (USGS 2021)
- *Handbook of North American Indians*, Volume 8 (Wallace 1978).

The OHP Historical Landmarks website (OHP 2021) did not identify any Californian Historical Landmarks (CHL) in the study area, and the National Park Service's NRHP website (NPS 2021) did not identify any historical properties in the study area. The nearest historical properties in the NSP database are located over 6.5 miles away, in the City of Los Banos.

Native American Correspondence

On May 28, 2021, ICF sent a letter to the NAHC requesting a search of its Sacred Lands File and a list of individuals and organizations that may have knowledge of properties of cultural or religious importance to Native Americans in the vicinity of the project. On June 28, 2021, ICF received a response letter from the NAHC stating that a search of Sacred Lands File failed to identify any Sacred Lands within the project area. The NAHC also provided a list of Native American contacts that may provide information on Native American cultural resources within the area. Refer to Section 3.18, *Tribal Cultural Resources*, for further discussion of tribal outreach that was conducted for the proposed project.

Field Surveys

ICF cultural resources specialists conducted pedestrian archaeological surveys of the solar project site between June and July of 2021. A pedestrian archaeological survey of the PG&E substation improvement area and gen-tie line route was conducted on September 27, 2022. The purpose of the surveys was to identify and record cultural resources within the project site. The off-site mitigation site was not surveyed due to lack of access.

The surveys consisted of pedestrian inspections of the project site, with the surveyors using an intensive survey strategy and walking 15-meter-wide transects. The entire project site was surveyed using this strategy with the exception of the areas within the PG&E substation existing fence line and the off-site residential redesignation area. Approximately 65 percent of the areas surveyed had poor surface visibility due to overgrown grasses that cover most of the project site, while visibility in the remaining 35 percent varied between moderate and good visibility. Areas that had exposed soil due to the backdirt piles of burrowing animals or other means of soil exposure were intensively inspected.

As a result of the pedestrian survey, eight isolated cultural resources were identified within the project area. These resources consist of three prehistoric flaked stone isolated artifacts and five historic era isolated artifacts.

The overall finding of the Cultural Resources Inventory Report (Appendix 3.5-1) is that the identified cultural resources in the project area are all isolated remains lacking in associative and interpretive context, except in broad regional terms. As isolates, none of the resources could be considered eligible for listing in the California Register of Historical Resources.

Buried Site Sensitivity

According to Rosenthal and Meyer (2004), the project area vicinity consists landforms of great age. Landforms identified include Pre-Quaternary (>1.8 million years) and Early to Middle Pleistocene (1.8 million to 130,000 years). These landforms pre-date human occupation of the area and as a result, the project area has very low sensitivity for buried prehistoric archaeological resources.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

Would the project:

- Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?
- Disturb any human remains, including those interred outside of formal cemeteries?

Impacts and Mitigation Measures

Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5? (*With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.*)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts to significant documented cultural resources that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.9-1 on page 5.9-10 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that no significant documented cultural resources, including historical resources, have been identified within or immediately adjacent to the off-site residential redesignation area. The Community Plan EIR also concluded that the potential exists for encountering previously undiscovered or undocumented historical resources during construction, but that implementation of Community Plan Mitigation Measure 5.9-2 would reduce the impact to a less-than-significant level through the application of pre-construction site surveys and cultural resource assessment protocols. Refer to the discussion under Impacts and Mitigation Measures on pages 5.9-10 through page 5.9-13 of the Community Plan EIR, which is incorporated by reference.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the Community Plan and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay. The change in land use designations for the area of the solar project site within the Community Plan would not change the impacts identified in the previous EIR, as all of that land was proposed to be developed, and therefore disturbed, as a part of the Community Plan. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use. This proposed change in land use designations would not change the impacts identified in the previous EIR, as all of that land was proposed to be developed, and therefore disturbed, as a part of the Community Plan. Historic aerial imagery analysis indicates that conditions have not materially changed since finalization of the Community Plan EIR. As shown in Figures 3.10-2 and 3.10-3 in Section 3.10, *Hydrology and Water Quality*, land in and around the project site was largely undeveloped, or in agriculture, when the Community Plan EIR was prepared, and remains so today. Therefore, impacts from the General Plan and Community Plan amendments would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction and Decommissioning

No historical resources have been identified on the project site or in the project area after conducting background research and site surveys. However, the potential exists for encountering previously undiscovered or undocumented historical resources which could result in significant impacts to historical resources during construction. Community Plan Mitigation Measure 5.9-2 includes four requirements to address this impact, only one of which is applicable to the solar project. Requirement (a) relates to two historic sites that are not located on the solar project site or in the residential redesignation area. Requirements (b) and (c) call for pre-construction surveys to identify potential cultural resources, which, as described above, have already been conducted for the solar project as part of this SEIR analysis. Requirement (d) includes protocol to be followed in the event unanticipated discoveries are found during construction. The solar project would implement project-specific Mitigation Measure CUL-1 instead of Community Plan Mitigation Measure 5.9-2 to ensure that unanticipated discoveries are handled and recorded properly pursuant to California law and that they are preserved in place or appropriately excavated by a qualified archaeologist. While Mitigation Measure CUL-1 is similar to Community Plan Mitigation Measure 5.9-2 requirement (d), additional details have been added regarding procedures to be followed in case of an unanticipated discovery. Thus, impacts from solar project construction and decommissioning will remain less than significant, consistent with the determination identified in the Community Plan EIR. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure CUL-1: Unanticipated Discovery Procedures

In the event unanticipated historical or archaeological resources are encountered during earth disturbing activities associated with the solar project, compliance with federal and state regulations and guidelines regarding the treatment of cultural resources and/or human remains shall be required. Any previously undiscovered resources found during construction should be recorded on appropriate DPR523 forms. The following measures shall also be implemented.

- All construction activities within 100 feet (30 meters) shall halt and the County shall be notified. The location of the discovery should be marked for avoidance, and efforts should be made to prevent inadvertent destruction of the find.
- A qualified archaeologist, defined as one meeting the Secretary of the Interior's Professional Qualifications Standards for Archaeology, shall inspect the findings and report the results of the inspection to the developer and the County.
- In the event that the identified archaeological resource is determined to be prehistoric, the County and qualified archaeologist shall coordinate with and solicit input from the appropriate Native American Tribal Representatives regarding significance and treatment of the resource as a tribal cultural resource. Any cultural resource of Native American origin discovered during solar project work shall be treated in consultation with the tribe, with the goal of preserving in place with proper treatment.
- If the County determines that the resource qualifies as a significant historical or archaeological resource (as defined pursuant to the CEQA Guidelines) and that solar project has potential to damage or destroy the resource, mitigation shall be implemented in accordance with PRC Section 21083.2 and CEQA Guidelines Section 15126.4. Consistent with CEQA Guidelines Section 15126.4(b)(3), mitigation shall be accomplished through either preservation in place or, if preservation in place is not feasible, data recovery through excavation conducted by a qualified archaeologist implementing a detailed archaeological treatment plan.

Operation

No historical resources have been identified on the project site or in the project area, and project operation would not have the potential to disturb cultural resources not already encountered during construction. Therefore, impacts from solar project operation would be less than significant, consistent with the determination identified in the Community Plan EIR., ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site outside of the Community Plan is approximately 561 acres and is designated in the County General Plan as Agricultural and Highway Interchange Center (HIC). Development of this land was not considered in the Community Plan EIR.

Between June and September 2021, an intensive pedestrian archaeological survey was conducted at the solar project site, including the portion of the site outside the Community Plan area. As a result of the survey, eight isolated cultural resources were identified. None of the resources identified were found to be eligible for listing on the CRHR. However, the potential exists for encountering previously undiscovered or undocumented historical resources which could result in significant impacts to historical resources during construction. For the reasons discussed above, implementation of Mitigation Measure CUL-1 would adequately address these risks and impacts from solar project construction will remain less than significant, consistent with the determination identified in the Community Plan EIR. Therefore, ***with implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Off-Site Mitigation Site

The proposed project would establish an off-site mitigation site in an area of approximately 1,498 acres located south of the solar project site. With the exception of invasive plant species abatement and overland vehicle travel by biological monitors, no ground disturbance or construction would be required on the off-site mitigation site; rather, the site would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. Invasive plant species abatement and overland vehicle travel would involve minimal to no ground disturbance. No new cultural resources surveys were conducted for the off-site mitigation site due to lack of access. A records search conducted for the off-site mitigation site indicates that there are 22 known cultural resources in the area and that approximately half of the off-site mitigation site has not been previously surveyed for cultural resources. Even though invasive plant species abatement and overland vehicle travel would require minimal ground disturbance, there is still potential for project activities to impact significant known and/or unknown cultural resources. Specific locations of project related activities to be conducted on the off-site mitigation site, and the extent of disturbance resulting from those activities are currently unknown. Therefore, the establishment of and conservation activities on the mitigation site could result in new or substantially more severe significant impacts on historical resources beyond those identified in the previous EIR and therefore, additional mitigation would be required in the form of Mitigation Measure CUL-2 and Mitigation Measure CUL-3. With implementation of these mitigation measures, the impact would

be less than significant, consistent with the Community Plan EIR conclusions. Therefore, ***with implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure CUL-2: Restrict Overland Vehicle Travel to Existing Roads During Biological Monitoring at Off-Site Mitigation Site

Because previously identified archaeological resources occurring on the ground surface are known to exist on the off-site mitigation site, and much of the area is sensitive for undiscovered surficial archaeological resources, overland vehicle travel associated with implementation of conservation activities within the off-site mitigation site shall be limited to existing paved and dirt roads. Travel to any areas not accessible by existing roads shall be undertaken on foot unless the area has been previously surveyed by a qualified archaeologist and found to not contain potentially eligible archaeological resources. The project applicant shall require biological monitors, as a condition of contract, to comply with this requirement.

Mitigation Measure CUL-3: Avoidance of Archaeological Resources During Mechanical Invasive Plant Abatement Activities at Off-Site Mitigation Site

Because previously identified archaeological resources occurring on the ground surface are known to exist on the off-site mitigation site, and much of the area is sensitive for undiscovered surficial archaeological resources, mechanical invasive plant abatement activities could impact known and/or unknown archaeological resources. To avoid impacts to archaeological resources, an intensive archaeological survey of any invasive plant abatement areas that will be mechanically treated shall be conducted by a qualified archaeologist prior to commencement of work if such mechanical activity is performed specifically to adhere to the management plan that will be implemented pursuant to Incidental Take Permit requirements. If potentially eligible archaeological resources are identified within areas proposed for mechanical invasive plant abatement, avoidance measures shall be implemented, including installation of temporary Environmentally Sensitive Area (ESA) fencing around the resource plus a 50-foot buffer around the resource boundary. No work may occur within the ESA fencing boundary. ESA fence installation shall be conducted by a qualified archaeologist or under the supervision of a qualified archaeologist. If the buffer cannot be observed at the potentially eligible resource, the Applicant and/or its contractor shall assess the find and determine whether the resource requires further study. This mitigation measure shall not apply to any ongoing existing treatment activities carried out by and at the volition of the landowner independent of the project. The project applicant shall require biological monitors, as a condition of contract, to comply with this requirement.

PG&E Substation Improvements

The proposed project would include transmission system improvements to PG&E's Los Banos substation in order to connect it to the solar project and facilitate the delivery of power. No historical resources have been identified in the PG&E substation improvement area, although the potential exists for encountering previously undiscovered or undocumented historical resources during construction. However, as discussed in Subsection 2.3.3 in Chapter 2, *Project Description*, PG&E will implement the following standard practice AMMs/BMPs to avoid and minimize impacts on archaeological resources:

- PG&E AMM/BMP-15: Cultural Resources. If any cultural resources are located during project activities, Utility Procedure ENV-8005P-01 will be implemented.
- PG&E AMM/BMP-17: Cultural Resource Training. Provide cultural resources awareness and response training to PG&E staff and contractors.

These standard AMMs/BMPs include providing cultural resources awareness and response training and stopping ground-disturbing work within 100 feet of discoveries until a cultural resource specialist can assess the discovery, and will ensure that if unknown historical resources are encountered during construction they will not be adversely affected. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, for the combined historical resource impacts of the entire proposed project, including its off-site residential redesignation, the solar project, off-site mitigation site components, and the PG&E substation improvements, impacts would be less than significant with mitigation, consistent with Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Impact CUL-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? (With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts to non-evaluated documented and undocumented cultural resources that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.9-2 on pages 5.9-10-5.9-11 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that construction activities could damage or destroy previously unknown or known non-evaluated significant or potentially significant archaeological resources, but that mitigation would reduce this impact to a less-than-significant level through application of pre-construction site surveys and cultural resource assessment protocols. Refer to the discussion under Impact 5.9-2 on pages 5.9-10-5.9-11 of the Community Plan EIR, which is incorporated by reference.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a *Utility-Scale Solar Overlay*. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change and establishment of the solar overlay would facilitate development of the solar project.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use. The off-site residential redesignation area remains undeveloped. Therefore, conditions have not materially changed since preparation of the Community Plan EIR. A high-density/medium-density residential use of the off-site residential redesignation area instead of a low-density residential use would not change the impacts identified in the Community Plan EIR, as the same lands would be disturbed. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction and Decommissioning

No significant archaeological resources have been identified on the solar project site or in the project area. However, the potential exists for encountering previously undiscovered subsurface archaeological resources during project construction. Any previously unrecorded archaeological resource encountered would be potentially CRHR-eligible, thus a significant resource for the purposes of CEQA. In that situation, the project would have potential to cause a substantial adverse change in its significance, thereby resulting in an impact. This project-specific impact would be potentially significant. However, implementation of project-specific Mitigation Measure CUL-1 would reduce the impact to a less-than-significant level because it would ensure that unanticipated discoveries are handled and recorded properly pursuant to California law and that they are preserved in place or appropriately excavated by a qualified archaeologist. Implementation of Mitigation Measure CUL-1 would reduce the impact of solar project construction and decommissioning to a less-than-significant level, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure CUL-1: Unanticipated Discovery Procedures

Refer to Mitigation Measure CUL-1 under Impact CUL-1.

Operation

No significant archaeological resources have been identified on the solar project site or in the project area, and project operation would not have the potential to disturb archaeological resources not already encountered during construction. Therefore, operation of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site outside of the Community Plan is approximately 561 acres and is designated in the County general plan as Agricultural. Development of this land was not considered in the Community Plan EIR.

Between June and September 2021, an intensive pedestrian archaeological survey was conducted at the solar project site. As a result of the survey, eight isolated cultural resources were identified. None of the resources identified were found to be eligible for listing on the CRHR. However, the potential exists for encountering previously undiscovered or undocumented historical resources which could result in significant impacts to historical resources during construction. For the reasons discussed above, implementation of Mitigation Measure CUL-1 would adequately address these risks. Therefore, impacts from solar project construction and decommissioning will remain less than significant, consistent with the determination identified in the Community Plan EIR. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.***

Off-Site Mitigation Site

The proposed project would establish an off-site mitigation site in an area of approximately 1,498 acres located south of the solar project site. With the exception of invasive plant species abatement and overland vehicle travel by biological monitors, no ground disturbance or construction would be required on the off-site mitigation site; rather, the site would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. Invasive plant species abatement and overland vehicle travel would involve minimal to no ground disturbance. No new cultural resources surveys were conducted for the off-site mitigation site due to lack of access. A records search conducted for the off-site mitigation site indicates that there are 22 known cultural resources in the area and that approximately half of the off-site mitigation site has not been previously surveyed for cultural resources. Even though invasive plant species abatement and overland vehicle travel would require minimal ground disturbance, there is still potential for project activities to impact significant known and/or unknown cultural resources. Specific locations of project related activities to be conducted on the off-site mitigation site, and the extent of disturbance resulting from those activities are currently unknown. Therefore, the establishment of and conservation activities on the mitigation site could result in new or substantially more severe significant impacts on historical resources beyond those identified in the previous EIR and therefore, additional mitigation would be required in the form of Mitigation Measure CUL-2 and Mitigation Measure CUL-3. With implementation of these mitigation measures, the impact of offsite mitigation site components would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure CUL-2: Restrict Overland Vehicle Travel to Existing Roads During Biological Monitoring

Refer to Mitigation Measure CUL-2 under Impact CUL-1.

Mitigation Measure CUL-3: Avoidance of Archaeological Resources During Mechanical Invasive Plant Abatement Activities

Refer to Mitigation Measure CUL-3 under Impact CUL-1.

PG&E Substation Improvements

No significant archaeological resources have been identified in the PG&E substation improvement area. However, the potential exists for encountering previously undiscovered subsurface archaeological resources during construction activities associated with the PG&E substation improvements. As discussed in Subsection 2.3.3 in Chapter 2, *Project Description*, PG&E will implement the following standard practice AMMs/BMPs to avoid and minimize impacts on archaeological resources:

- PG&E AMM/BMP-15: Cultural Resources. If any cultural resources are located during project activities, Utility Procedure ENV-8005P-01 will be implemented.
- PG&E AMM/BMP-17: Cultural Resource Training. Provide cultural resources awareness and response training to PG&E staff and contractors.

These standard AMMs/BMPs include providing cultural resources awareness and response training and stopping ground-disturbing work within 100 feet of discoveries until a cultural resource specialist can assess the discovery, and will ensure that if unknown archaeological resources are encountered during construction they will not be adversely affected. With the implementation of PG&E standard AMMs/BMPs impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, the proposed project, including the off-site residential redesignation, solar project, off-site mitigation site, and PG&E substation improvements would have a potentially significant impact on archaeological resources. However, for the reasons described above, these combined impacts would be less than significant with mitigation, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Impact CUL-3: Disturb any human remains, including those interred outside of formal cemeteries? (With implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts to human remains that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.9-3 on pages 5.9-12 – 5.9-13 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that construction activities could encounter buried subsurface human remains, but that Community Plan EIR Mitigation Measure 5.9-3 would reduce this impact to a less-than-significant level through the application of protocols for responding to the discovery of human remains, such as halting work and notifying the County coroner. Refer to the discussion under Impact 5.9-3 on pages 5.9-12-5.9-13 of the Community Plan EIR, which is incorporated by reference.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a *Utility-Scale Solar Overlay*. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use. The off-site residential redesignation area remains undeveloped. Therefore, conditions have not materially changed since preparation of the Community Plan EIR. This proposed change in land use designations would not change the impacts identified in the previous EIR, as all of that land was proposed to be developed, and therefore disturbed, as a part of the Community Plan. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

No human remains have been identified on the solar project site or in the project area. However, the potential exists for encountering buried human remains during solar project construction. Any human remains encountered would be potentially CRHR-eligible, thus a significant resource for the purposes of CEQA. In that situation, the solar project would have the potential to cause a substantial adverse change in its significance, thereby resulting in a potentially significant impact. This impact would be potentially significant. However, future development within the off-site residential redesignation area would be subject to Mitigation Measure 5.9-3 in the Community Plan EIR, which requires:

- If human remains are discovered, work will halt in the area of the find and the Merced County coroner will be notified. If the coroner determines that the remains are Native American, they will notify the NAHC.
- Following the coroner's findings, the property owner, project proponent, an archaeologist, and the NAHC-designated most likely descendant (MLD) will determine appropriate treatment and disposition of the remains and take appropriate steps to ensure additional human interments are not disturbed.
- If an MLD is not identified or if the designated MLD fails to make a recommendation, the landowner or an authorized representative will rebury the human remains and associated grave goods with appropriate dignity on the property in a location not subject to further ground disturbance.

Community Plan EIR Mitigation Measure 5.9-3 would reduce the impact to a less-than-significant level because it would ensure that appropriate procedures are observed by qualified professionals in compliance with California law in the event of discovery of human remains, such as by temporarily

stopping work in the vicinity of the discovery and engaging the county coroner. Therefore, impacts of the construction of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

No human remains have been identified on the solar project site or in the project area. However, the potential exists for encountering buried human remains during solar project operation and maintenance activities. Any human remains encountered would be potentially CRHR-eligible, thus a significant resource for the purposes of CEQA. In that situation, the solar project would have potential to cause a substantial adverse change in its significance, thereby resulting in an impact. This impact would be potentially significant. However, for the reasons described above, implementation of Community Plan EIR Mitigation Measure 5.9-3 would reduce the impact of solar project operation to a less-than-significant level, consistent with the Community Plan EIR conclusion. Therefore, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

No human remains have been identified on the solar project site or in the project area. However, the potential exists for encountering buried human remains during solar project decommissioning activities. Any human remains encountered would be potentially CRHR-eligible, thus a significant resource for the purposes of CEQA. In that situation, the solar project would have potential to cause a substantial adverse change in its significance, thereby resulting in an impact. This impact would be potentially significant. However, for the reasons described above, implementation of Community Plan EIR Mitigation Measure 5.9-3 would reduce the impact of solar project decommissioning to a less-than-significant level, consistent with the Community Plan EIR conclusion. Therefore, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site outside of the Community Plan is approximately 561 acres and is designated in the County general plan as Agricultural. Development of this land was not considered in the Community Plan EIR.

No human remains have been identified on the solar project site or in the project area. However, the potential exists for encountering buried human remains during solar project decommissioning activities. Any human remains encountered would be potentially CRHR-eligible, thus a significant resource for the purposes of CEQA. In that situation, the solar project would have potential to cause a substantial adverse change in its significance, thereby resulting in a new potentially significant impact that was not considered in the Community Plan EIR. Implementation of Community Plan EIR Mitigation Measure 5.9-3, which the applicant has committed to implementing across the entire solar project site, including the portion outside the Community Plan area, would reduce the new impact of solar project construction and decommissioning to a less-than-significant level, consistent with the Community Plan EIR

conclusion. ***With implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.***

Off-Site Mitigation Site

The proposed project would establish an off-site mitigation site in an area of approximately 1,498 acres located south of the solar project site. With the exception of invasive plant species abatement and overland vehicle travel by biological monitors, no ground disturbance or construction would be required on the off-site mitigation site; rather, the site would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. Invasive plant species abatement and overland vehicle travel would involve minimal to no ground disturbance. No new cultural resources surveys were conducted for the off-site mitigation site due to lack of access. A records search conducted for the off-site mitigation site indicates that there are 22 known cultural resources in the area and that approximately half of the off-site mitigation site has not been previously surveyed for cultural resources. One previously recorded cultural resource has human remains present. Even though invasive plant species abatement and overland vehicle travel would require minimal ground disturbance, there is still potential for project activities to impact known and/or unknown human remains. Specific locations of project related activities to be conducted on the off-site mitigation site, and the extent of disturbance resulting from those activities are currently unknown. Therefore, the establishment of and conservation activities on the mitigation site could result in new or substantially more severe significant impacts on human remains beyond those identified in the previous EIR and therefore, additional mitigation would be required in the form of Mitigation Measure CUL-2 and Mitigation Measure CUL-3. With implementation of these mitigation measures, the impacts of off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure CUL-2: Restrict Overland Vehicle Travel to Existing Roads During Biological Monitoring

Refer to Mitigation Measure CUL-2 under Impact CUL-1.

Mitigation Measure CUL-3: Avoidance of Archaeological Resources During Mechanical Invasive Plant Abatement Activities

Refer to Mitigation Measure CUL-3 under Impact CUL-1.

PG&E Substation Improvements

No human remains have been identified in the PG&E substation improvement area. However, the potential exists for encountering previously undiscovered subsurface human remains during construction activities associated with the PG&E substation improvements. As discussed in Subsection 2.3.3 in Chapter 2, *Project Description*, PG&E will implement the following standard practice AMMs/BMP to avoid and minimize impacts on human remains:

- **PG&E AMM/BMP-16:** Human Remains Follow state law regarding treatment and disposition of human remains. Implementation AMM/BMP-16 would ensure less-than-significant impacts to human remains inadvertently discovered during construction-related activities.

With the implementation of PG&E standard AMMS/BMPs, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, the proposed project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, would have a potentially significant impact on buried human remains. However, for the reasons described above, implementation of Community Plan EIR Mitigation Measure 5.9-3 would reduce the impacts to a less-than-significant level, consistent with the Community Plan EIR conclusion. ***With implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.***

3.5.3 References Cited

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3.6 Energy

This section identifies and evaluates the project's potential impacts on energy, including the wasteful, inefficient, or unnecessary consumption of energy resources, and potential conflicts with or obstruction of a state or local plan for renewable energy or energy efficiency. This section also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site General Plan amendment are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Relevant technical documentation used in this analysis includes:

- *Draft Air Quality Technical Report, Las Camas Solar Project* (AQR), ICF 2024 (Appendix 3.3-1)

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. No questions or concerns related to energy were raised in the responses to the NOP.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.6.1 Existing Conditions

Environmental Setting

Energy resources in California include natural gas, electric, water, wind, oil, coal, solar, geothermal, and nuclear resources. Energy production and energy use both result in the depletion of nonrenewable resources, such as oil, natural gas, and coal, and the emission of pollutants.

State Setting

California's diverse portfolio of energy resources produced approximately 2,190.2 trillion British thermal units (BTUs) in 2020 (U.S. Energy Information Administration [U.S. EIA] 2022a). According to the California Energy Commission (CEC), total electric generation for California in 2021 (the most recent year for which data are available) was approximately 277,764 gigawatt hours. California's non-carbon-dioxide-emitting electric generation categories, including nuclear, hydroelectric, and renewable generation, accounted for approximately 49 percent of total in-state generation in 2021, which is a 2 percent decrease from 2020 due to impacts on hydroelectric power and other forms of

renewable energy from California's ongoing drought. California's in-state electric generation was approximately 194,127 gigawatt hours (CEC 2022a). Excluding offshore areas, the state ranked seventh in the nation in crude oil production in 2020 (the most recent year for which data are available), producing the equivalent of approximately 814.5 trillion BTUs (U.S. EIA 2022b). Other energy sources in the state include natural gas (192.1 trillion BTUs), nuclear (169.8 trillion BTUs), and biofuel (20.3 trillion BTUs) (U.S. EIA 2022a and 2022b).¹

With a relatively mild Mediterranean climate and strict energy-efficiency requirements, California has lower energy consumption rates than other parts of the United States. According to the U.S. EIA, California consumed approximately 6,922.8 trillion BTUs of energy in 2020 (U.S. EIA 2022c).² California's per capita energy consumption of approximately 175.3 million BTUs was ranked third lowest in the nation as of 2020 (U.S. EIA 2022d).

In 2020, the transportation sector consumed the greatest amount of energy (2,355.5 trillion BTUs, or 34 percent), followed by the industrial (1,701.2 trillion BTUs, or 24 percent), residential (1,507.7 trillion BTUs, or 22 percent), and commercial (1,358.3 trillion BTUs, or 20 percent) sectors (U.S. EIA 2022c). Natural gas accounted for the majority of energy consumption (2,144 trillion BTUs, or 31 percent), followed by gasoline (1,357.8 trillion BTUs, or 20 percent); renewable energy, including nuclear electric power, hydroelectric power, biomass, and other renewables (1,310.2 trillion BTUs, or 19 percent); distillates and jet fuel (865.7 trillion BTUs, or 12 percent); and interstate electricity (756.5 trillion BTUs, or 11 percent), with the remaining 7 percent coming from a variety of other sources (U.S. EIA 2022e). Of the natural gas consumed, industrial uses consumed approximately 33 percent, followed by residential uses (21 percent) and commercial uses (11 percent), among many other uses (U.S. EIA 2022f).

Per capita energy consumption, in general, is declining because of improvements in energy efficiency and designs. However, despite this reduction in per capita energy use, the state's total overall energy consumption (i.e., non-per capita energy consumption) is expected to grow over the next several decades as a result of increases in population, jobs, and vehicle miles traveled (VMT).

Regional Setting

Electricity

PG&E provides electricity to Merced County through its distribution system. Historically, PG&E has provided natural gas and electricity services to the vast majority of Northern California, including Merced County and the project site. PG&E is a publicly traded utility company that, under contract with the California Public Utilities Commission (CPUC), generates, purchases, and distributes energy. PG&E's service area covers 70,000 square miles, roughly extending north to south from Eureka to Bakersfield and east to west from the Sierra Nevada to the Pacific Ocean. PG&E's electricity distribution system consists of 106,681 circuit miles of electric distribution lines and 18,466 circuit miles of interconnected transmission lines (PG&E 2022a).

PG&E's electricity is generated from a combination of traditional sources, such as coal-fired plants, nuclear power plants, and hydroelectric dams, as well as newer sources of energy, such as wind turbines and photovoltaic plants, or "solar farms." "The grid," or bulk electric grid, is a network of high-voltage transmission lines that link power plants to the PG&E system. The

¹ No coal production occurs in California.

² One BTU is the amount of energy required to heat 1 pound of water by 1°F at sea level. BTU is the standard unit of energy used in the United States and based on the English system of units (foot-pound-second system).

distribution system, comprising lower-voltage secondary lines, is at the street and neighborhood level. It consists of overhead or underground distribution lines, transformers, and individual service “drops” that connect to individual customers.

In addition to its base plan, PG&E has three plan options, known as Solar Choice or Green Saver programs, which give customers the option of purchasing energy from solar resources. The first Solar Choice option provides up to 50 percent of a customer’s energy from solar resources, while the other Solar Choice option provides up to 100 percent of a customer’s energy from solar resources. The Green Saver option is the same as the 100 percent Solar Choice option, except it offers a program for income-qualified residential customers in select communities to save 20 percent on their electricity bills by subscribing to the 100 percent solar energy option.

In 2021, Merced County consumed approximately 3,129 million kilowatts of electricity. In Merced County, electricity was consumed primarily by the non-residential sector (72 percent), followed by the residential sector (28 percent) (CEC 2022b). Electricity usage for different land uses varies substantially by the types of uses in a building, the types of construction materials used, and the efficiency of the electricity-consuming devices.

Table 3.6-1 outlines PG&E’s power mix in 2021 compared to the power mix for the state and identifies the renewable and non-renewable energy sources for PG&E and the state. It should be noted that some greenhouse gas- (GHG-) free sources are not considered renewable (e.g., nuclear is GHG free but not renewable). In addition, Table 3.6-2 outlines energy consumption in 2021 for PG&E’s service area.

Table 3.6-1. PG&E and the State of California Power Mix in 2021

Energy Resources	PG&E: Base Plan	PG&E: 50% Solar Choice	PG&E: 100% Solar Choice	PG&E: Green Saver	California Power Mix 2021
Eligible Renewal	47.7%	70.9%	93.9%	89.9%	33.6%
<i>Biomass and Biowaste</i>	4.2%	2.1%	0%	0%	2.3%
<i>Geothermal</i>	5.2%	2.6%	0%	0%	4.8%
<i>Eligible Hydroelectric</i>	1.8%	0.9%	0%	0%	1.0%
<i>Solar</i>	25.7%	59.8%	93.9%	89.9%	14.2%
<i>Wind</i>	10.9%	5.5%	0%	0%	11.4%
Non-Renewable	52.3%	29.1%	6.1%	10.1%	66.4%
<i>Coal</i>	0%	0%	0%	0%	3.0%
<i>Large Hydroelectric</i>	4.0%	2.0%	0%	0%	9.2%
<i>Natural Gas</i>	8.9%	7.4%	0%	0%	37.9%
<i>Nuclear</i>	39.3%	19.7%	0%	0%	9.3%
<i>Other</i>	0%	0%	0%	0%	0.2%
<i>Unspecified^a</i>	0%	0%	6.1%	10.1%	6.8%
Total	100%	100%	100%	100%	100%

Source: PG&E. 2022b. *2021 Power Content Label*. Available: https://www.pge.com/pge_global/common/pdfs/your-account/your-bill/understand-your-bill/bill-inserts/2022/1022-Power-Content-Label.pdf. Accessed: November 8, 2022.

^a Electricity from transactions that are not traceable to specific generation sources are classified as unspecified sources of power.

Table 3.6-2. Energy Consumption in the PG&E Service Area in 2021

Energy Uses	Gigawatt Hours
Agriculture and Water Pump	7,446.1
Commercial	26,009.1
Commercial Other	3,869.3
Industry	9,958.8
Mining and Construction	1,764.0
Residential	29,229.9
Streetlight	310.6
Total Usage	78,587.9

Source: CEC. 2022c. *Electricity Consumption by Entity—PG&E 2021*. Available: <http://www.ecdms.energy.ca.gov/elecbyutil.aspx>. Accessed: November 8, 2022.

Natural Gas

PG&E's natural gas (i.e., methane) delivery system includes 42,141 miles of natural gas distribution pipelines and 6,438 miles of transmission pipelines (PG&E 2022a). PG&E's gas transmission system is operated under an inspection and monitoring program in real time on a 24-hour basis, with leak inspections, surveys, and patrols continuously taking place along the pipelines. Gas delivered by PG&E originates in gas fields in California, the Southwest, the Rocky Mountains, and Canada. Transmission pipelines send natural gas from the fields and storage facilities. The smaller distribution pipelines deliver gas to individual businesses or residences (PG&E 2022c).

In Merced County, approximately 131 million therms of natural gas were consumed in 2021 (the most recent year for which data are available). In 2021, natural gas in Merced County was consumed primarily by the non-residential sector (79 percent), followed by the residential sector (21 percent) (CEC 2022d).

Solar Project Site and PG&E Substation

The project site includes the roughly 1,741 acres of undeveloped, privately owned land for the solar project site as well as the PG&E substation improvement area and the connecting gen-tie line. The solar project site, which is at the southwest corner of the intersection of State Route (SR) 133/SR 152 and Interstate 5. The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming. The PG&E Los Banos Substation is approximately 0.2 mile west of the solar project site; the substation's equipment is fenced within a footprint of approximately 47 acres. There is no existing energy usage at the solar project site. The PG&E Los Banos Substation generates energy for use within PG&E's service territory.

The solar project site and PG&E substation are served by existing natural gas and electric infrastructure provided by PG&E. Natural gas and electricity are delivered through rights-of-way for natural gas and electric lines. Three 230-kilovolt (kV) electric transmission lines and a 69 kV electric transmission line run north-south through the solar project site and intersect at the western corner. In addition, an approximately 17-mile natural gas transmission pipeline runs through the eastern portion of the solar project site adjacent to Interstate 5 (U.S. Department of Transportation n.d.).

Off-Site Mitigation Site

The off-site mitigation site is an area of approximately 1,498 acres, located approximately 5 miles south of the solar project site and immediately south of the Los Banos Reservoir. The off-site mitigation site is currently composed of grassland habitat used for grazing; it contains no existing uses or activities that consume energy resources.

Off-Site Residential Redesignation Area

As described in Chapter 2, *Project Description*, the proposed off-site residential redesignation area falls within the Villages of Laguna San Luis Community Plan area. The Community Plan designates the off-site residential redesignation area for varying residential densities, among other uses. As described in Chapter 3 of the Community Plan EIR on page 3-1, and incorporated by reference, the off-site residential redesignation area is used primarily for active and fallowed agricultural production (e.g., alfalfa, hay, oats, vineyards, orchards) and cattle and sheep grazing. This discussion accurately describes the current existing setting at the residential redesignation area.

Regulatory Setting

Federal

As discussed in Sections 3.3, *Air Quality*, and 3.8, *Greenhouse Gas Emissions*, of this SEIR, the National Highway Traffic Safety Administration (NHTSA) sets Corporate Average Fuel Economy (CAFE) standards to improve average fuel economy (i.e., reduce fuel consumption) and reduce GHG emissions generated by cars and light-duty trucks. NHTSA and the U.S. Environmental Protection Agency (EPA) have proposed amendments to the current fuel efficiency standards for passenger cars and light-duty trucks and new standards for model years 2021 through 2026, known as the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule. Under the SAFE Vehicles Rule, current 2020 standards would be maintained through 2026. California, 22 other states, the District of Columbia, and two cities filed suit against the proposed action on September 20, 2019 (*California et al. v. United States Department of Transportation et al.*, 1:19-cv-02826, U.S. District Court for the District of Columbia).³ The lawsuit requests a “permanent injunction prohibiting defendants from implementing or relying on the preemption regulation” but does not stay its implementation during legal deliberations. Part 1 of the SAFE Vehicles Rule went into effect on November 26, 2019, and Part 2 went into effect on March 30, 2020.⁴ However, on April 22, 2021, NHTSA announced that it proposed repealing the SAFE Vehicles Rule, Part 1, allowing California the right to set its own standards (U.S. Department of Transportation 2021). On December 19, 2021, NHTSA finalized its vehicle efficiency standards rule to reach a projected industry-wide

³ On February 11, 2020, *California et al. v. United States Department of Transportation et al.* was pending resolution of the related litigation of *Union of Concerned Scientists v. National Highway Traffic Safety Administration* (19-1230, U.S. Court of Appeals for the District of Columbia Circuit). The Union of Concerned Scientists, Environmental Defense Fund, and other groups filed a protective petition for review after the federal government sought to dismiss or transfer to the D.C. Circuit a case filed in federal court in D.C. challenging NHTSA’s final rule withdrawing California’s waiver for its GHG and zero-emission vehicle (ZEV) program and preempting state programs that regulate vehicle greenhouse gas emissions or create ZEV mandates. On February 8, 2021, the D.C. Circuit Court of Appeals issued an order, holding the cases in abeyance pending regulatory review.

⁴ Of note, on January 20, 2021, President Biden released EO 13990, which, among other things, calls for agency review for Part 1 of the SAFE Vehicles Rule by April 2021 and Part 2 by July 2021. The order states that agencies shall consider whether to propose, suspend, revise, or rescind these rules.

target of 40 miles per gallon by 2026, an approximately 25 percent increase over the prior SAFE Vehicles Rule. Lastly, on March 9, 2022, EPA reinstated California's authority under the Clean Air Act to implement its own GHG emissions standards and sales mandate regarding zero-emission vehicles. This action concluded EPA's reconsideration of 2019's SAFE Vehicles Rule, Part 1, by finding that actions under the previous administration were decided in error; the actions are now rescinded (EPA 2022).

Energy Policy Act of 2005

The Energy Policy Act, adopted in August 2005, amended existing regulations, including fuel economy testing procedures and requirements for federal and state agencies as well as alternative-fuel providers. Specifically, the Energy Policy Act addressed issues regarding energy production and reliance on nonrenewable energy in the U.S., including, but not limited to, issues regarding energy efficiency, renewable energy production, oil and gas, nuclear matters and security, vehicles and motor fuels, hydropower and geothermal energy, and climate change technology. In addition, the act called for grant programs and tax incentives that promote the use of alternative fuels and the production of advanced vehicles.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (EISA) was signed into law by President Bush in December 2007. EISA reinforced the energy reduction goals for federal agencies set forth in Executive Order (EO) 13423 (Strengthening Federal Environmental, Energy, and Transportation Management) and provided for additional energy reduction requirements. EISA also aimed to increase the production of clean renewable fuels; increase U.S. energy security, develop renewable fuel production, improve vehicle fuel economy; and promote research on GHG capture and storage options.

State

California has adopted statewide legislation to address various aspects of climate change and GHGs, which often pertain directly or indirectly to energy resources and uses. This section focuses on state legislation that specifically mentions energy use or energy resources. For other state legislation that focuses mainly on GHG emissions reductions and climate change, refer to Section 3.8, *Greenhouse Gas Emissions*, of this SEIR.

Assembly Bill 1493, Pavley Rules (2002, amendments 2009)/Advanced Clean Cars (2011)

Known as Pavley I, Assembly Bill (AB) 1493 provided the nation's first GHG standards for automobiles. AB 1493 required the California Air Resources Board (CARB) to adopt vehicle standards to lower GHG emissions from automobiles and light-duty trucks to the maximum extent feasible, beginning in 2009. In 2012, strengthening of the Pavley standards (referred to previously as *Pavley II* but now referred to as the *Advanced Clean Cars* measures) was adopted for vehicle model years 2017 through 2025. Together, the two standards are expected to increase average fuel economy to roughly 54.5 miles per gallon by 2025. The increase in fuel economy will help lower the demand for fossil fuels.

In August 2022, CARB board members voted to approve the Advanced Clean Cars II proposal, which aimed to dramatically reduce emissions from passenger cars (model years 2026 through 2035). This requires an increasing proportion of new vehicles to be zero-emission vehicles, with the goal being to have 100 percent of new vehicles sold by 2035 to be zero-emission vehicles (CARB 2022).

CARB also adopted the Advanced Clean Truck Regulation to accelerate a large-scale transition to zero-emission medium- and heavy-duty vehicles (CARB 2023). The regulation requires zero-emission medium- and heavy-duty vehicles to make up an increasing percentage of total annual vehicle sales in California between 2024 and 2035. By 2035, zero-emission truck/chassis sales would need to amount to 55 percent of Class 2b – 3 truck sales, 75 percent of Class 4 – 8 straight truck sales, and 40 percent of truck tractor sales. By 2045, every new medium- and heavy-duty truck sold in California will be a zero-emission vehicle. Large employers, including retailers, manufacturers, brokers, and others, are required to report information about shipments and shuttle services to ensure that fleets purchase available zero-emission trucks.

California Energy Efficiency Standards for Residential and Nonresidential Buildings—California Green Building Standards Code (2011), Title 24 Updates

The California Green Building Standards Code (Part 11, Title 24), or CALGreen, was adopted as part of the California Building Standards Code (24 California Code of Regulations). CALGreen, which applies to the planning, design, operation, construction, use, and occupancy of newly constructed buildings, required energy- and water-efficient indoor infrastructure to be installed in all new projects, beginning January 1, 2011. CALGreen also required newly constructed building to develop a waste management plan and divert at least 50 percent of the construction materials generated during project construction.

The current Building Energy Efficiency Standards were adopted in 2019 and took effect on January 1, 2020. Under the 2019 standards, new buildings are required to reduce water consumption by 20 percent, and install low-pollutant-emitting materials. Later standards are expected to require zero net energy for certain uses, including new commercial buildings. Updated CALGreen and Building Energy Efficiency Standards were recently approved; these took effect on January 1, 2023. The updates will result in increased building energy efficiency compared to current conditions.

Executive Order B-16-12 (2012)

Under the direction of the governor, EO B-16-12 orders state entities, including CARB, the CEC, and the CPUC, to support rapid commercialization of zero-emission vehicles. It also directs these entities to achieve various benchmarks related to zero-emission vehicles.

Senate Bill 350, Chapter 547, Clean Energy and Pollution Reduction Act of 2015

Senate Bill (SB) 350 (DeLeon), also known as the Clean Energy and Pollution Reduction Act of 2015, was approved by the California legislature in September 2015 and signed by Governor Brown in October 2015. Its key provisions require the following by 2030: (1) a Renewables Portfolio Standard (RPS)⁵ of 50 percent and (2) doubling of the statewide energy efficiency savings related to natural gas and electricity end uses (CEC 2022e). In order to meet these provisions, the bill requires large utilities to develop and submit integrated resource plans that detail how the utilities will reduce GHG emissions and increase the use of clean energy resources while meeting customers' needs.

⁵ The RPS is one of California's key programs for promoting renewable energy use within the state. The program sets forth continuous procurement of renewable energy for load-serving entities within California.

Senate Bill 100—The 100 Percent Clean Energy Act of 2018 (2018)

SB 100 builds on SB 350, the Clean Energy and Pollution Reduction Act of 2015. SB 100 increases the 2030 RPS target set in SB 350 to 60 percent and requires 100 percent of retail sales of electricity to California end-user customers and 100 percent of electricity produced to serve state agencies to be from renewable and other zero-carbon resources by 2045.

Assembly Bill 1279—The California Climate Crisis Act

AB 1279 declares the policy of the state both to achieve net zero greenhouse gas emissions no later than 2045, to achieve and maintain net negative greenhouse gas emissions thereafter, and to ensure that by 2045, statewide anthropogenic greenhouse gas emissions are reduced to at least 85 percent below the 1990 levels.

Senate Bill 1020—The Clean Energy, Jobs and Affordability Act of 2022

SB 1020 requires that eligible renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035, 95 percent of all retail sales of electricity to California end-use customers by December 31, 2040, and 100 percent of all retail sales of electricity to California end-use customers by December 31, 2045. In addition, 100 percent of electricity procured to serve all state agencies must be provided by eligible renewable energy resources and zero-carbon resources by December 31, 2035.

Local

PG&E Integrated Resource Plan

PG&E adopted the 2022 Integrated Resource Plan (IRP) on November 1, 2022, to provide guidance for serving the electricity and natural gas needs of residents and businesses within its service area while fulfilling regulatory requirements (PG&E 2022d). The IRP contains the following objectives that are relevant to the proposed project:

- **Clean Energy:** In 2021, PG&E delivered nearly 48 percent of its electricity from RPS-eligible renewable resources, such as solar, wind, geothermal, biomass, and small hydropower. In addition, PG&E's GHG-free energy production, which includes renewable resources, large hydropower, and nuclear energy generation, satisfied 91 percent of PG&E bundled retail sales in 2021. PG&E's IRP is also focused on facilitating a path for PG&E to meet its clean energy requirements under SB 100 as well as its 2030 and 2035 GHG planning benchmarks assigned in the IRP.
- **Reliability:** PG&E's IRP analysis includes PG&E's contribution to system and local reliability, in compliance with the CPUC's resource adequacy requirements, especially as California transitions toward higher shares of GHG-free generation resources.
- **Affordability:** PG&E's IRP analysis selects resources to meet the state's clean energy and reliability goals and provides a system-average rate forecast in compliance with the CPUC's requirements for investor-owned utilities.

2030 Merced County General Plan

The *2030 Merced County General Plan*, adopted in December 2013, provides a vision for long-range physical and economic development of the county, provides strategies and specific implementing actions, and establishes a basis for judging whether specific development proposals and public projects are consistent with the County of Merced's (County's) plans and policy standards (County 2013). The County General Plan includes the following policies that are applicable to energy:

- **Policy AQ-1.1:** Energy Consumption Reduction. Encourage new residential, commercial, and industrial development to reduce air quality impacts from energy consumption.
- **Policy AQ-1.2:** Business Energy Reduction Strategies. Encourage all businesses to replace high-mileage fleet vehicles with more efficient and/or alternative-fuel vehicles, increase the energy efficiency of facilities, transition toward the use of renewable energy instead of non-renewable energy sources, adopt purchasing practices that promote emissions reductions and reusable materials, and increase recycling.
- **Policy LU-2.7:** Rural Energy Production. Allow the development of ethanol production, co-generation, solar, and wind facilities in Agricultural and Foothill Pasture areas that produce renewable energy, support agricultural-related industries, and/or use agricultural waste, provided that such uses do not interfere with agricultural practices or conflict with sensitive habitats or other biological resources.
- **Policy LU-5.B.10:** Green Building Development. Maximize use of passive and active solar and/or wind energy resources, and require incorporation of green building design and technology into new development within Urban Communities.
- **Goal LU-9:** Support and promote energy efficiency through innovative building design and land use patterns.
 - **Policy LU-9.1:** Solar Access. Require new residential subdivision lots and new commercial, office, industrial, and public buildings to be oriented and landscaped to enhance natural lighting and solar access in order to maximize energy efficiency.
 - **Policy LU-9.2:** Sustainable Building Practices. Promote sustainable building practices, including the requirements of Title 24 of the California Administrative Code.
 - **Policy LU-9.5:** Energy Conservation Standards for New Construction. Cooperate with the local building industry, utilities, and air district to promote enhanced energy conservation standards for new construction.
 - **Policy AG-3.11:** Solar and Wind Energy Production Facilities. Encourage the installation of solar and wind energy production facilities in agricultural areas so long as they do not result in a tax burden to the County, do not result in permanent water transfers off of productive agricultural land, do not require cancellation of Williamson Act contracts, and do not conflict with sensitive habitats or other biological resources. In addition, approval of such facilities shall require dedications of agricultural land and habitat mitigation when impacts on these resources have been determined to be significant pursuant to CEQA, measures to control erosion, and assurances for financing decommission activities.
 - **Policy CIR-1.2:** Transportation Efficiency. Encourage transportation programs that result in more efficient energy use, reduce greenhouse gas emissions and noise levels, and improve air quality.

- **Goal NR-2:** Provide adequate and efficient energy supplies by increasing renewable energy production and energy conservation.
 - **Policy NR-2.1:** Renewable Energy Use. Promote the development and use of renewable energy resources to reduce dependency on petroleum-based energy sources.
 - **Policy NR-2.2:** Clean Alternative Energy Requirement. Encourage new electricity providers to use only clean alternative energy sources (e.g., solar, thermal, and wind).
 - **Policy NR-2.4:** Solar Power. Encourage on-site solar power use in residential, commercial, and industrial buildings, and utility-scale solar power projects in rural locations that do not harm agricultural productivity and habitat values consistent with Policies AG-3.11 and LU-2.7.
 - **Policy NR-2.6:** Open Space Impacts. Work with public agencies and private energy providers to ensure that energy products avoid or minimize impacts on open space, natural resources, and productive agricultural land.
 - **Policy NR-2.9:** Energy Conservation. Encourage and maximize energy conservation and identification of alternative energy sources (e.g., wind or solar).
 - **Policy NR-2.11:** Energy-Efficient Focused Design. Encourage the use of energy-efficiency design features such as site orientation, light color building materials, and tree canopies.
 - **Policy NR-2.12:** Green Practices Education. Encourage recycling, composting, source reduction, and education efforts throughout the county for residents, businesses, institutions, and construction.

Villages of Laguna San Luis Community Plan

The Villages of Laguna San Luis Community Plan, adopted in September 2008, provides a long-range growth and development plan for approximately 6,200 acres of land west of Interstate 5 along SR 152 and SR 33 in western Merced County (County 2008). The community plan includes policies and guidance for the establishment of a new community that can accommodate growth and market demands, all while ensuring adequate public services and facilities as well as compatibility with surrounding environment. The community plan includes the following goal that is applicable to energy:

- **Goal 3.0:** Develop a community that is responsive to its natural setting and promotes the conservation of water and non-renewable resources and minimizes pollutant emissions.

Merced County Climate Action Plan

In 2018, the County began development of a Climate Action Plan (CAP) to outline a strategy for how the County will reduce its GHG emissions in accordance with statewide targets. The County had not finished preparation of the CAP at the time this SEIR was being prepared. Preparation was slowed, in part, because of the COVID-19 pandemic.

3.6.2 Environmental Impacts

This section describes the proposed project's potential impacts on energy. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

Methods for Analysis

Energy impacts associated with construction and operation of the proposed project were assessed and quantified, where applicable, using standard and accepted software tools and techniques. A summary of the methodology for calculating the project's energy use is provided in the paragraphs below.

Project Construction

Construction of the project would use energy, such as electricity for mobile offices and fuel for off-road equipment, haul trucks, and workers' trips. The construction schedule, equipment operating details, trip numbers and lengths, and material quantities were provided by the project applicant. The calculation of energy consumption from vehicles, in the form of fuel use, was based on the number of trips and VMT, along with fuel efficiency data from EMFAC2021. Trip counts were provided by the project applicant for hauling and trips by workers. California Emissions Estimator Model (CalEEMod) Version 2020.4.0 defaults were used for worker trip lengths; project-specific information was provided for hauling trips. The estimate of fuel use from off-road construction equipment was consistent with EPA's AP-42, diesel fuel, using project-specific information provided by the project applicant. The construction assumptions and calculation results are provided in Appendix 3.3-1.

Project Operation

Fuel use was estimated using EMFAC2021 for on-road VMT by operations and maintenance employees. Trip generation rates and total VMT were provided by KD Anderson & Associates (see Appendix 3.17-1). The data were used to estimate energy consumption for motor vehicles traveling to and from the project site. In addition, electricity consumption for operation of the project would be provided by the facility itself (i.e., the solar project would be self-powering). The operation assumptions and results are provided in Appendix 3.3-1.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would have a significant effect if it would result in any of the conditions listed below.

Would the project:

- Result in potentially significant environmental impact due to the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Impacts and Mitigation Measures

Impact EN-1: Result in potentially significant environmental impact due to the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated potential impacts related to the increased demand for electricity and natural gas that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.7-9 and 5.7-10 on pages 5.7-35 through 5.7-37 of the Community Plan EIR, which is

incorporated by reference. The Community Plan EIR found that development under the Community Plan could increase energy demand and result in the expansion of energy infrastructure. However, the Community Plan EIR found that PG&E's existing supply of electricity and natural gas was adequate and able to serve buildout of the Community Plan. In addition, the Community Plan EIR determined that, through compliance with state regulatory requirements, the California Building Code, and PG&E and County requirements, impacts related to the increased energy demand and expanded infrastructure would be minimized. Therefore, the Community Plan EIR found that impacts on electrical and natural gas supplies and infrastructure capacity would be less than significant.

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and community plan and an associated zone change for the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; installation of communication equipment, electrical distribution/transmission infrastructure, and substation equipment; development of public utility facilities; and construction of ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to redesignate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

As described in Chapter 2, *Project Description*, the proposed off-site General Plan amendment would redistribute the housing that was planned under the approved Community Plan, thereby preserving the supply of affordable residential units that could be developed during the life span of the solar project (i.e., 35 years); in other words, the proposed off-site General Plan amendment would maintain the County's overall capacity for developing new high-density/medium-density housing. The proposed project would not increase the number of units potentially developed in the future, nor would it involve the construction of new housing or any other type of physical development within the off-site residential redesignation area. Future development under the off-site General Plan amendment would result in increased energy demand and expanded infrastructure, however, this development would not be beyond the energy demand and infrastructure identified in the Community Plan EIR. Further, the off-site residential redesignation area and the larger community plan area remain undeveloped, as they existed when the County certified the Community Plan EIR. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

Natural gas would not be used during construction activities. Construction of the solar project would include grading and compaction, trenching, and the installation of civil infrastructure (e.g., roads, utilities, fencing), mechanical infrastructure (e.g., tracking components, photovoltaic panels), and electrical infrastructure (e.g., direct-current collection system, inverters/transformers), which would consume energy. Therefore, construction of the solar project would result in a temporary increase in demand for energy resources. Construction associated with the project would require

energy, primarily in the form of gasoline or diesel fuel for the trucks that would transport equipment and materials to/from the solar project site. In addition, electricity would be required during construction for the temporary office and construction facilities, which are anticipated to obtain electricity from a temporary drop-off line from the local electrical distribution system. However, if access to the distribution system is unavailable, up to 10 diesel generators would be used. These would meet local and state emission controls and energy requirements.

The estimate of total construction-related energy consumption for the solar project is provided in Table 3.6-3. As shown, construction of the solar project would consume approximately 147,780.3 million BTUs over the approximately 14-month construction period. This would be considered a small, temporary increase in energy demand during construction. In addition, consistent with CALGreen requirements, at least 50 percent of waste generated from construction and demolition activities would be diverted through recycling and/or salvaging, thereby reducing energy consumption that would otherwise result from the production of new building materials. Furthermore, as described in more detail below, although the solar project would consume energy during construction, long-term operation of the solar project would result in the net new generation of renewable energy, which would offset any energy consumed during construction of the solar project. Therefore, construction of the solar project would not result in the inefficient, wasteful, or unnecessary consumption of energy resources; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Table 3.6-3. Estimated Total Construction Energy Consumption from the Solar Project

Source	Usage (units vary)	Usage (million BTU)
Electricity	351.4 megawatt-hours	1,199.0
Gasoline	467,885 gallons	56,257.6
Diesel	657,469 gallons	90,323.8
Project Construction: Total Energy Consumption 147,780.3		

Operation

The solar project would not use natural gas during operation. The electricity demand from operation of the project would include the electricity consumed by the solar facility and associated components. In addition, vehicles traveling to and from the solar facility for operations and maintenance would require gasoline and diesel fuel. The estimated operational energy consumption for the solar project per year is provided in Table 3.6-4, below.

Table 3.6-4. Estimated Operational Energy Consumption from the Solar Project (per year)

Source	Usage (units vary)	Usage (million BTU)
Electricity	4.8 megawatt-hours	16.4
Gasoline	290 gallons	36.2
Diesel	36 gallons	5.0
Project Operational: Total Energy Consumption		1,240.2

As shown in Table 3.6-4, buildout of the solar project would increase operational energy consumption on the solar project site by 1,240 million BTUs per year compared with existing conditions.⁶ Development of the solar project site would comply with all applicable County and state “green” building measures, including Title 24, which is commonly referred to as CALGreen. In addition, the project would generate solar power that would be used not only to power the solar facility itself but ultimately, after distribution through PG&E’s existing grid system, to power residential and commercial customers. The solar project is projected to generate approximately 593,208 megawatt-hours (MWh) of clean, renewable electricity per year, which would equate to approximately 2,024,109.7 million BTU per year. Therefore, although the project would result in an increase in energy consumption compared with existing conditions, the project would not result in the inefficient, wasteful, or unnecessary consumption of energy resources during operation because it would provide an efficient and renewable source of energy in the form of solar power that would offset its operational energy use. Impacts from operation of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning and site reclamation would begin immediately after the 35-year lifespan of the solar project, expected in 2060. A decommissioning and reclamation plan has been prepared in accordance with County requirements. The plan would ensure that the solar project facilities would be decommissioned and removed and that the solar project site would be restored to pre-construction conditions. The decommissioning and site reclamation process is expected to take approximately 12 months and include activities and equipment types similar to those used during construction of the solar project, thereby resulting in a small, temporary increase in energy demand. In addition, although decommissioning of the solar project would remove a source of a renewable energy, it is anticipated that all energy in the state would be provided by renewable sources by 2060, in accordance with SB 100. Furthermore, the solar project is projected to generate approximately 593,208 MWh/year of clean, renewable electricity, which would equate to approximately 2,024,109.7 million BTU per year, and would offset any energy consumed during decommissioning of the solar project. Therefore, based on the above analysis, decommissioning of the solar site would not result in the wasteful, inefficient, or unnecessary consumption of energy resources; impacts from decommissioning of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Energy uses associated with the portion of the solar project located on the lands outside of the Community Plan are included in the above.

⁶ Because the solar project site is grassland, there is no existing energy consumption on the site.

Off-Site Mitigation Site

The project would establish an off-site mitigation site of approximately 1,498 acres of grassland habitat. The habitat area would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. It would continue to be grazed or mowed and remain permeable for kit fox movement. Rodenticide usage would be prohibited. The proposed uses for the off-site mitigation site would be consistent with the existing uses on the site and require little to no energy consumption. Therefore, the off-site mitigation site would not result in the wasteful, inefficient, or unnecessary consumption of energy resources; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The existing PG&E Los Banos Substation is approximately 0.2 mile west of the solar project site. The proposed project includes transmission system improvements at the substation to connect it to the solar project site and facilitate the delivery of power from the solar project. As part of the project, the existing substation fence would be moved outward to the south and east, on existing substation property, to accommodate the additional equipment that would be required to support the new solar facility. The area within the modified fence would encompass an additional approximately 450,000-square-foot (10.3-acre) area of existing PG&E-owned substation property. Within this area, a new 230 kV breaker-and-a-half (BAAH) bus section and a new 230 kV enclosure would be installed. Additional utility infrastructure installed in this area would include new power circuit breakers, air disconnect switches, voltage transformers, controls, power and communication cables, underground fiber cables and fiber terminations, yard lighting, and a ground grid.

Outside the fenced area, but also on PG&E-owned substation property, other infrastructure improvements to support connection to the solar facility would include, but not be limited to, communication cables or conduits, associated IT equipment, and meter receptables. In addition, up to 10 structures would be installed on substation property to support a new 230 kV transmission line, connecting substation facilities to the adjacent solar project. As shown in Table 3.6-5, construction of the PG&E substation improvements would consume approximately 4,142.7 million BTUs. However, the PG&E substation improvements would be a component of the overall project and would ultimately help to facilitate the delivery of approximately 593,208 MWh/year of clean, renewable electricity to existing PG&E customers, which would offset the energy use associated with the PG&E substation improvements. Therefore, for the reasons stated above in the solar project analysis, the PG&E substation improvements would not result in the wasteful, inefficient, or unnecessary consumption of energy resources; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Table 3.6-5. Estimated Total Construction Energy Consumption from the PG&E Substation Improvements

Source	Usage (units vary)	Usage (million BTU)
Gasoline	4,008 gallons	481.9
Diesel	26,647 gallons	3,660.8
Total Energy Consumption 4,142.7		

Whole Project

Because no project component would result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation, the impact of the whole project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site components, would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential environmental impacts that could result from buildout of the Community Plan. Although the Community Plan EIR did not explicitly evaluate potential impacts related to conflicts with or obstruction of a state or local plan for renewable energy, it did evaluate potential impacts related to increased demand for electricity and natural gas, as detailed above in Impact EN-1 and in Impacts 5.7-9 and 5.7-10 on pages 5.7-35 through 5.7-37 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that PG&E's existing supply of energy and natural gas was adequate and able to serve development under the Community Plan and that compliance with state regulatory requirements, the California Building Code, and PG&E and County requirements, impacts related to energy demand would be minimized. Therefore, the Community Plan EIR found that this impact would be less than significant.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and community plan and an associated zone change for the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; installation of communication equipment, electrical distribution/transmission infrastructure, and substation equipment; development of public utility facilities; and construction of ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to redesignate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

As stated above, the proposed off-site General Plan amendment would redistribute, but not increase, the housing that was planned under the approved Community Plan, thereby preserving the supply of residential units that could be developed during the life span of the solar project (i.e., 35 years). The off-site residential redesignation area and the larger Community Plan area would remain as they existed when the County certified the Community Plan EIR. Therefore, impacts

from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction, Operation, and Decommissioning

State and local renewable energy and energy efficiency plans applicable to the project are discussed above under *Regulatory Setting*. State plans include the AB 1493 Pavley Rules, California Title 24 energy efficiency standards, EO B-16-12, SB 350, SB 100, AB 1279, and SB 1020. Each contains required standards related to energy efficiency and renewable energy development. Local plans that address energy efficiency to achieve the state's RPS mandates include PG&E's 2022 IRP as well as the County General Plan and Villages at Laguna San Luis Community Plan, which includes goals, policies, and requirements related to energy use and energy reductions.

As discussed above under Impact EN-1, the solar project would involve the construction, operation and maintenance, and decommissioning of a solar facility that would ultimately produce a new source of renewable energy within Merced County. During construction, approximately 147,780.3 MMBTUs of energy would be consumed; during operation of the facility, approximately 1,240.2 MMBTUs of energy would be consumed. However, consistent with CALGreen requirements, at least 50 percent of waste from construction and demolition activities would be diverted through recycling and/or salvaging. In addition, although the solar project would consume energy in the form of electricity, gasoline, and diesel fuel during construction and operation, it would be used primarily to generate a new source of renewable energy in the form of solar power. Any energy resources consumed during construction or operation of the solar project would be offset by the anticipated solar project's energy generation of approximately 593,208 MWh per year.

The solar project would be consistent with the County General Plan, including Policy LU-2.7, *Rural Energy Production*, and Policy AG-3.11, *Solar and Wind Energy Production Facilities*, as well as SB 350 and SB 100 because the project would further many of the goals of these regulations with development of a new source of renewable energy. In addition, with implementation of the solar project, PG&E would continue to pursue the procurement of renewable energy sources to meet its RPS portfolio goals and comply with state regulations. Further, although decommissioning of the solar project would remove a source of a renewable energy, it is anticipated that all energy in the state would be provided by renewable energy sources by 2060, in accordance with SB 100. Accordingly, the project would not impede implementation of any of these plans. Therefore, solar project construction, operation, and decommissioning would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Energy use associated with the portion of the solar project located on the lands outside of the Community Plan is included in the analysis above.

Off-Site Mitigation Site

As described in Impact EN-1, the proposed uses for the off-site mitigation site would be consistent with the existing uses on the site and require little to no energy consumption. Therefore, the off-site mitigation site would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The improvements to the PG&E substation, described above in Impact EN-1, would connect the facility to the solar project and facilitate the delivery of power from the solar project to the existing PG&E power grid. The PG&E substation improvements would allow the operation of a new source of renewable energy, thereby supporting and adhering to the federal, state, and local energy regulations related to renewable energy, as listed in the *Regulatory Setting*, above. The improvements would support the distribution of a new source of renewable energy. They would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Because no project component would conflict with or obstruct a state or local plan for renewable energy or energy efficiency, the impact of the whole project, including the off-site residential redesignation, the solar project, PG&E substation improvements, and off-site mitigation site components, would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts beyond those identified in the previous EIR and no additional mitigation would be required.***

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3.7 Geology, Soils, and Paleontological Resources

This section identifies and evaluates the project's potential impacts on geology, soils, and paleontological resources. This section also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; implementing the off-site Merced County General Plan (General Plan) amendment; and establishing the off-site mitigation site. Potential impacts associated with the solar project and PG&E substation improvements are analyzed at a project level, and potential impacts associated with the off-site General Plan amendment and off-site mitigation site are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Relevant technical documentation used in this analysis includes:

- *Feasibility-Level Geotechnical Study for the Las Camas Solar Project, Merced County, California* (ICF 2024) (Appendix 3.7-1)
- *Preliminary Geotechnical Report, Las Camas Solar Project, Merced County, California* (RRC Power & Energy, LLC 2020) (Appendix 3.7-2)
- *Paleontological Inventory Report: Las Camas Solar Project, Merced County, California* (Paleo Solutions 2024) (Appendix 3.7-3)

No questions or concerns related to geology, soils, and paleontological resources were raised in the responses to the notice of preparation (NOP) (Appendix 1-2).

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.7.1 Existing Conditions

Environmental Setting

Regional Setting

The solar project site, PG&E substation, off-site residential redesignation area, and the off-site mitigation site within California's Great Valley Geomorphic Province.¹ The Great Valley is an alluvial plain, about 50 miles wide and 400 miles long, in the central part of California. Its

¹ California's geomorphic provinces are naturally defined geologic regions that display a distinct landscape or landform. Earth scientists recognize 11 provinces in California. Each region displays unique defining features, based on geology, faults, topographic relief, and climate.

northern part is the Sacramento Valley, which is drained by the Sacramento River, and its southern part is the San Joaquin Valley, which is drained by the San Joaquin River. The Great Valley is a trough in which sediments have been deposited almost continuously since the Jurassic (about 160 million years ago) (California Geological Survey 2002).

From the time the valley first began to form, sediments derived from the erosion of igneous and metamorphic rocks and consolidated marine sediments in the surrounding mountains have been transported into the valley by streams. These continental sediments are thicker than 10,000 feet at the southern end of the valley and have an average thickness of about 2,400 feet. The continental sediments consist mostly of sand and gravel interbedded and mixed with clay and silt. Depending on location, deposits of fine-grained materials (mostly clay and silt) make up as much as 50 percent of the thickness of the valley fill sediments.

The geologic formations found within Merced County are composed of the Basement Complex, Ione Formation, Valley Springs Formation, Mehrten Formation, Tulare Formation, and recent alluvium. The Basement Complex is composed of crystalline igneous and metamorphic rocks and lies beneath the sedimentary units. The Ione Formation, reflecting its heritage as delta alluvial deposits, is composed of claystone and sandstones, with a small percentage of conglomerates. The Valley Springs Formation is alluvium composed of sandstones, siltstones, and claystones. The Mehrten Formation is alluvium composed of conglomerates, sandstones, siltstones, and claystones. The lacustrine Tulare Formation is composed of claystone, sandstone. Within the Tulare Formation is the Corcoran Clay Member, a prominent aquitard found throughout the Merced region. Quaternary river and floodplain deposits, consisting of clays, silt, sands, and gravel, overly the formations as soil deposits. The thin interbedded and clay-rich nature of these deposits dominates the geology.

The solar project site partially overlies the Delta-Mendota Subbasin (Subbasin). The PG&E substation and proposed gen-tie line fully overlie the Subbasin. The off-site residential redesignation area and off-site mitigation site are outside the Subbasin. The Subbasin is in the northwest portion of the San Joaquin Valley Groundwater Basin, within the southern portion of the Central Valley. Depth to groundwater has been reported at a depth as shallow as 9 feet below ground surface at a well 1 mile northeast of the solar project site (RRC Power & Energy 2020). An earlier preliminary site assessment report recorded static groundwater between 33 and 49 feet below ground surface at a site approximately 0.31 mile from the western portion of the solar project site.

Solar Project Site

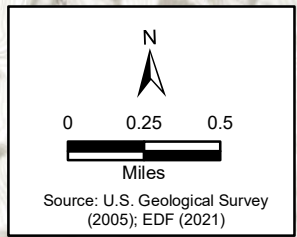
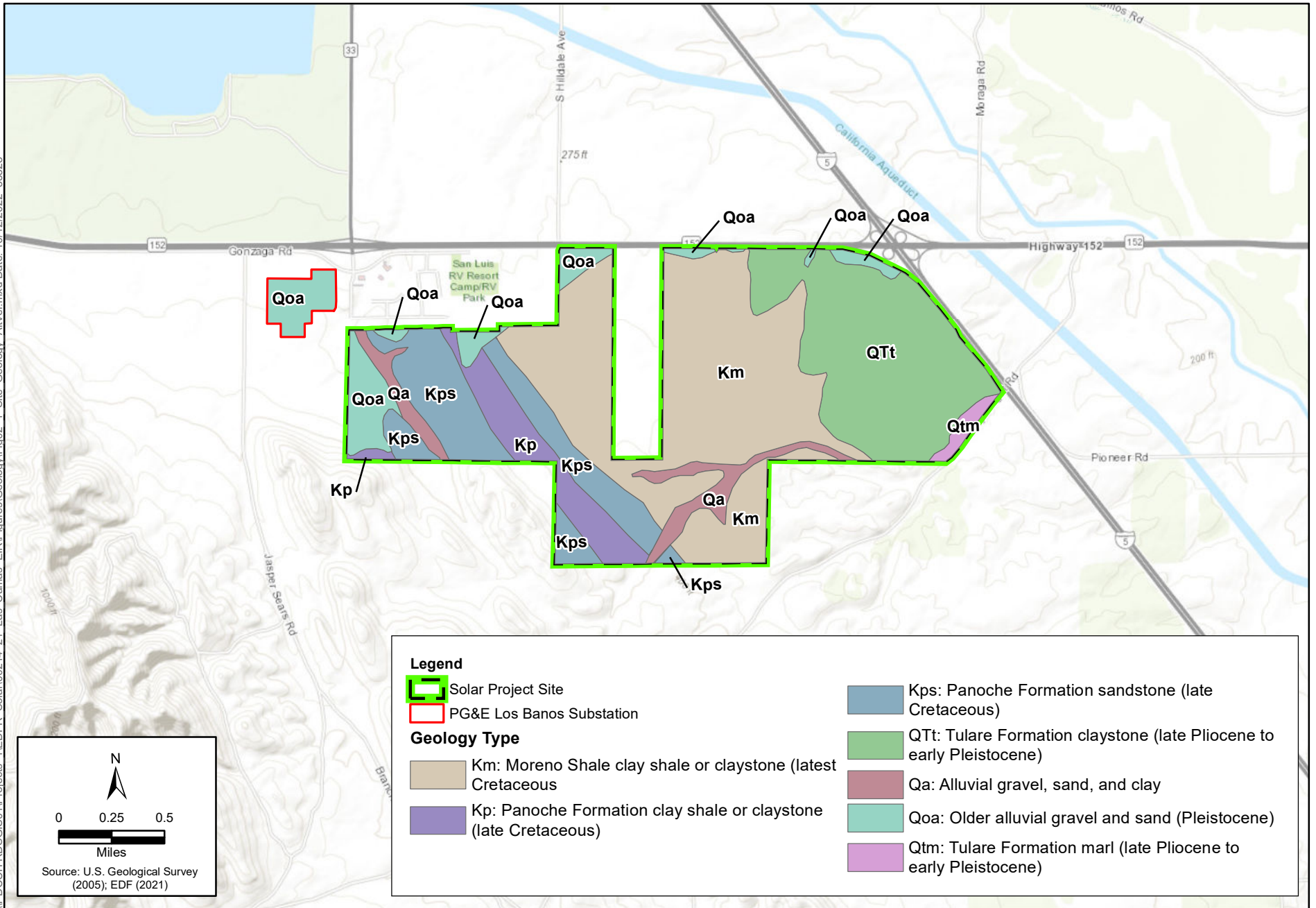
The solar project site is on approximately 1,741 acres of vacant, undeveloped land in an unincorporated part of the county at the southwest corner of the intersection of State Route (SR) 33/SR 152 and Interstate 5 (I-5). The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming.

Geology

The solar project site is underlain by following geologic formations (see Figure 3.7-1).

- Surficial Sediments – Alluvial gravel, sand, and clay of valley areas (Qa)
- Older Surficial Sediments – Older alluvial gravel and sand (Qoa)

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**Figure 3.7-1
 Site Geology**



- Tulare Formation – Mostly alluvial claystone (gray, massive, and soft), including minor sand and pebble conglomerate (QTt)
- Tulare Formation – Marl (white and soft but coherent, thickly bedded, freshwater evaporite), locally, upper part of Tulare Formation (QTm)
- Moreno Shale – Clay shale or claystone (gray, vaguely bedded, micaceous, argillaceous, and crumbly) (Km)
- Panoche Formation – Clay shale or claystone (dark gray, bedded, micaceous, and argillaceous), including thin layers of sandstone locally (Kp)
- Panoche Formation – Sandstone (light gray to light brown, bedded, hard, fine to medium grained, and arkosic; some members contain large, hard, dark-brown concretions), including minor amounts of interbedded clay shale, similar to Kp (Kps)

Topography and Floodplain

Topography within the solar project site is mostly flat or gently rolling. Steeper slopes are clustered near the southwest corner of the site and along a riverine feature. Elevation on the solar project site ranges from approximately 220 feet above sea level at the lowest point to 558 feet at the highest point.

The largest portion of the solar project site is within the USGS Volta 7.5-minute topographic quadrangle (quad). The western portion of the solar project site is within the USGS San Luis Dam 7.5-minute topographic quad.

The solar project site is located within Zone D for flood hazard, an area of undetermined flood hazard, according to the National Flood Hazard Layer Viewer (Federal Emergency Management Agency 2008.)

Soils

According to a preliminary geotechnical report prepared for the solar project site (RRC Power & Energy 2020), borings advanced in the field indicated that native soils were encountered beneath approximately 3 to 18 inches of topsoil and extended to a depth of 7 to 9 feet (where bedrock was encountered in two borings) or to the full depth of exploration. Native soils encountered were the following:

- Medium-stiff to very stiff clay, with varying amounts of sand;
- Silt, with varying amounts of sand; and
- Loose to very dense sand, with varying amounts of clay.

According to the Natural Resources Conservation Service's *Web Soil Survey* (Natural Resources Conservation Service 2022), the following descriptions are of the primary soil units located within the solar project site (see Figure 3.7-2):

- **Los Banos clay loam.** The Los Banos series consists of very deep, well-drained soils on terraces and fan remnants. These soils formed in calcareous gravelly alluvium from mixed rock sources and have slow permeability.

- **Apollo clay loam.** The Apollo series consists of deep, well-drained soils formed in material weathered from soft calcareous shale and soft sandstone. Apollo soils are found on low foothills adjacent to valley floors and have moderately slow permeability.
- **Damluis clay loam.** The Damluis series consists of very deep, well-drained soils that formed in alluvium from mixed sources. Damluis soils are on low or uplifted dissected terraces and have slow permeability.
- **O'Neil silt loam.** The O'Neil series consists of moderately deep, well-drained soils on rolling to steep foothills. They soils formed in material weathered from calcareous sandstone and shale and have moderately slow permeability.
- **San Timoteo-Wisflat sandy loams complex.** The San Timoteo series consists of moderately deep, well-drained to somewhat excessively drained soils that formed in material weathered from shale, sandstone, and calcified weathered granite. San Timoteo soils are found on uplands and have moderately rapid permeability. The Wisflat series consists of shallow, well-drained soils on foothills, hills, and mountains. These soils formed in material weathered from sandstone and shale and have moderately rapid permeability.
- **Ballvar loam.** The Ballvar series consists of deep, well-drained soils on alluvial fans. These soils formed in mixed alluvium from sedimentary rock and have moderately slow permeability.
- **Ayar clay.** The Ayar series consists of deep or very deep, well-drained soils that formed in material weathered from decomposed alkaline shales and sandstone on rolling hills and have slow permeability when cracks are closed (December through May).

Some of these soils can be affected by ground disturbance, including soil erosion, expansiveness, and subsidence.

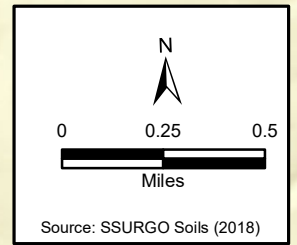
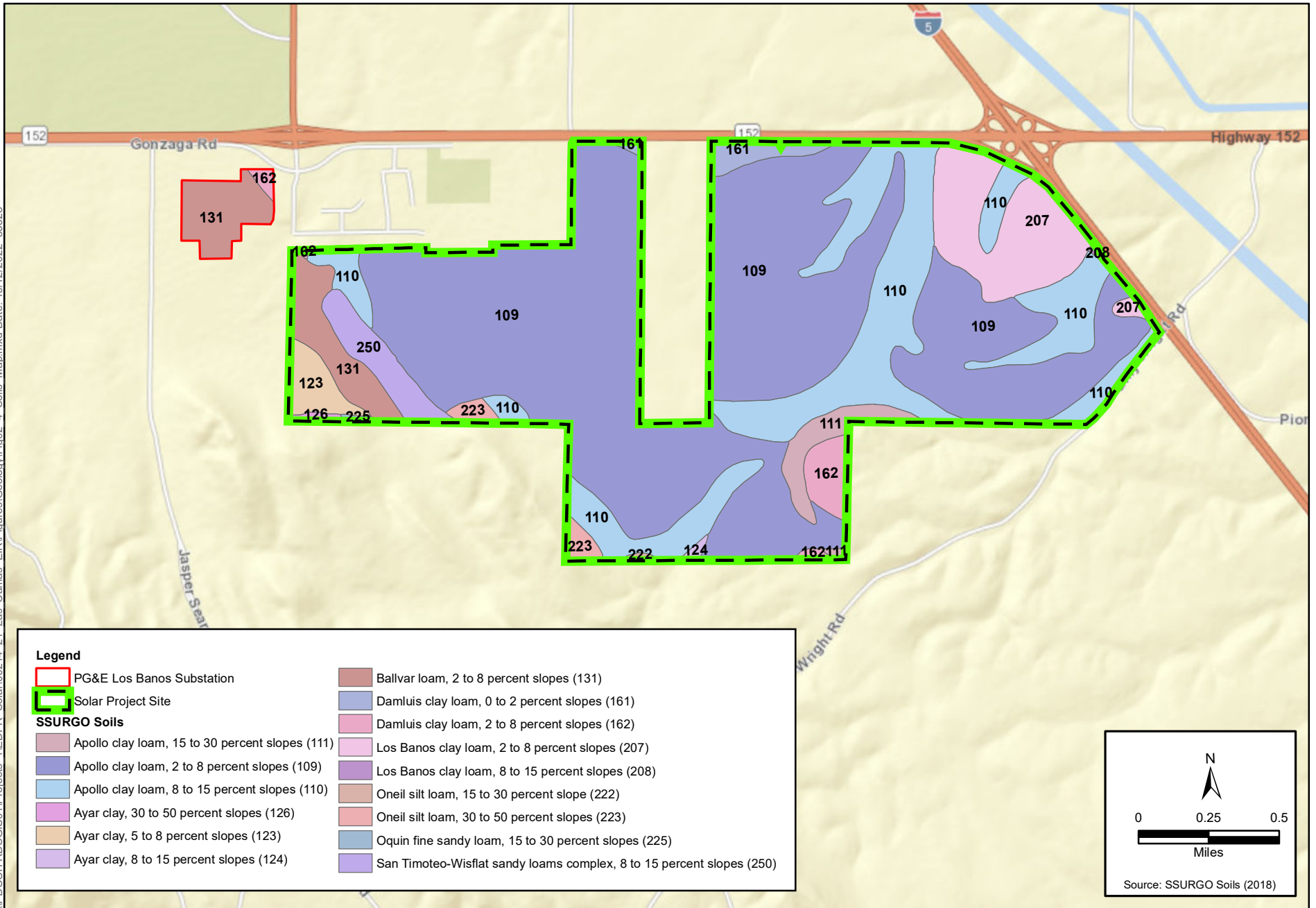
Soil erosion is a condition that could adversely affect development on any site. Ground disturbance can cause or exacerbate erosion conditions by exposing soils and adding water to the soil from runoff. The Natural Resources Conservation Service category Erosion Hazard (road, trail) evaluates to what extent an unsurfaced road on the soil would be susceptible to erosion.

Expansive soils are typically composed of clays and can undergo a volume change with changes in moisture content. They have tendencies to expand and soften when wet and harden when dry. If not properly considered prior to the construction of structures, this expansive behavior can damage foundations and other building components.

Land subsidence is a gradual settling or sudden sinking of the surface, owing to subsurface movement of earth materials. Land subsidence in California generally occurs in areas where fluid (petroleum and groundwater) removal has occurred. The solar project site is not within an area of historical ground subsidence.

Table 3.7-1 describes the susceptibility of the soils at the solar project site to erosion hazard and expansiveness.

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**Figure 3.7-2
Soil Units**



Table 3.7-1. Soil Hazards at the Solar Project Site

Map Unit Name	Erosion Hazard (road, trail)^a	Expansiveness
Los Banos clay loam	Moderate to severe	High
Apollo clay loam	Severe	Moderate
Damluis clay loam	Slight to moderate	High
O'Neil silt loam	Severe	Low
San Timoteo-Wisflat sandy loams complex	Moderate to severe	Low
Ballvar loam	Moderate	Moderate
Ayar clay	Moderate to severe	High

Source: Natural Resources Conservation Service 2022.

Notes:

^a Susceptibility to erosion hazard is indicated by a range where the susceptibility varies according to the slope.

Seismicity

Seismic movement is caused by movement of the tectonic plates on the earth's surface. This movement occurs along fault zones.

Faults of historical significance have been (and are expected to continue to be) the principal sources of seismic activity affecting Merced. The nearest faults of major historical significance to the project area are the San Andreas fault to the west and Calaveras faults to the northwest. The Ortigalita fault is the nearest fault to the solar project site and is considered an active fault (most displacements associated with the Ortigalita fault are characterized as right-lateral, strike-slip movements, with some reverse and normal faulting). Fault locations are depicted in Figure 3.7-3. Table 3.7-2 shows the distance of each of these faults to the solar project site.

Table 3.7-2. Faults near the Project Site

Fault	Distance from Project Site (miles)	Direction	Notes
Ortigalita	5.1	northwest	The largest earthquake associated with the Ortigalita fault appears to have been a magnitude 3.7 event that occurred just south of the San Luis Reservoir in 1981.
Quien Sabe	20	southwest	The Quien Sabe fault zone is seismically active at depth. Most of the area between the San Andreas and the Quien Sabe faults is seismically active.
Calaveras	25	southwest	The Calaveras fault zone is seismically active at depth. Segments of the Calaveras fault are well defined and characterized by geomorphic evidence of Holocene faulting.
San Andreas	30	southwest	The San Andreas is the major fault of an intricate fault network that cuts through rocks of the California coastal region.

Seismic Hazards

Surface Fault Rupture

The Alquist-Priolo-Earthquake Fault Zoning Act, as discussed in the Regulatory Setting, requires that local jurisdictions place limitations on development projects within Earthquake Fault Zones, mapped in accordance with requirements of the Alquist-Priolo-Earthquake Fault Zoning Act, to minimize risk of damage resulting from surface fault rupture. The solar project site is not located within an Earthquake Fault Zone.

Seismic Ground Shaking

Seismic ground shaking can occur throughout California and depends on local geology and the distance between the project area and the causal fault. Because of the location of the solar project site in relation to nearby active faults, the solar project site is likely to be subject to strong ground shaking in the event of a major earthquake.

Liquefaction and Lateral Spreading

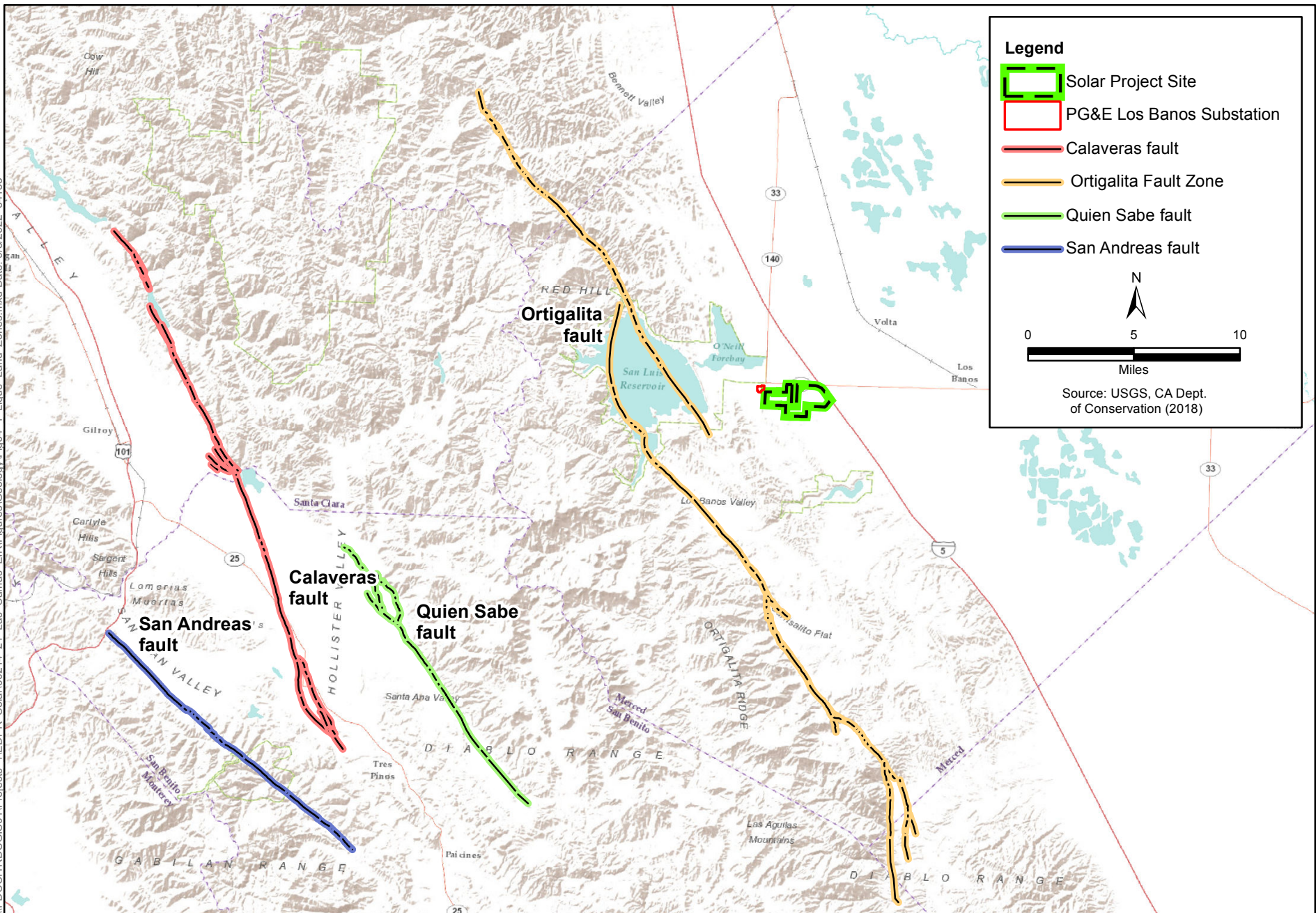
Liquefaction is the phenomenon in which saturated granular sediments temporarily lose their shear strength during periods of earthquake-induced ground shaking. The susceptibility of a site to liquefaction is a function of soil type, the water content of granular sediments, and the magnitude and frequency of earthquakes in the surrounding region. Saturated, unconsolidated silt, sand, and silty sand within 50 feet of the ground surface are most susceptible to liquefaction. Liquefaction-related phenomena may include lateral spreading, ground oscillation, loss of bearing strength, subsidence, and buoyancy effects.

Neither the Volta nor the San Luis Dam U.S. Geological Survey (USGS) topographic quad has been evaluated for liquefaction or landslide potential (per the California Geologic Survey). According to the *2030 Merced County General Plan Background Report* (Mintier et al. 2013), although no specific liquefaction hazard areas have been identified in the county, the potential for liquefaction exists throughout the San Joaquin Valley because of unconsolidated sediments and a high water table. Based on available data, shallow groundwater conditions could exist on-site because static groundwater levels near the project area have been reported at approximately 16 feet below the ground surface, with the shallowest measurements recorded at 9 feet below the ground surface northeast of the solar project site. Moreover, primary soil units identified through the Soil Web Survey and soil characteristics identified during a preliminary geotechnical investigation conducted for the solar project site identified on-site soils that contained varying amounts of silts and sand, further contributing to potentially liquefiable conditions (RRC Power & Energy, LLC. 2020). Because of the location of the solar project site in relation to nearby active faults, soils that contain varying amounts of silts and sands, and possible presence of shallow groundwater, the solar project site could be subject to liquefaction in the event of a major earthquake.

Landslide

Landslides generally occur where slopes are steep and/or soils lack cohesiveness. Although the western part of the county near the Coast Range is the area of greatest concern with respect to slope instability, topography within the solar project site is mostly flat or gently rolling, with an average slope of 4.9 percent. Therefore, the potential for landslides within the solar project site is low.

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**Figure 3.7-3
Fault Locations**



Paleontological Resources

Paleontology is the study of fossils (paleontological resources) to understand the history of life on earth. Paleontological resources are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. These include mineralized, partially mineralized, or unmineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains. Paleontological resources include not only fossils themselves, but also the associated rocks or organic matter and the physical characteristics of the fossils' associated sedimentary matrix.

Paleontological resources vary widely in their relative abundance and distribution and not all are regarded as significant. The Bureau of Land Management identifies significant paleontological resources as those that are of scientific interest, including most vertebrate fossil remains and traces and certain rare or unusual invertebrate and plant fossils, are high quality and well preserved, preserve a previously unknown anatomical or other characteristic, provide new information about the history of life on earth, and are of educational or recreational value.

Paleontological resources occur in geologic units, The likelihood of a geologic unit to contain paleontological resources is based on its age, depositional environment, geologic history, and history of having produced fossils in the past. That is, if a geologic unit has yielded paleontological resources in the past in one area, the same geologic unit is likely to yield paleontological resources in another area. The geologic units in the study area and documentation of paleontological resources previously recovered from these geologic units are discussed below.

Alluvial Gravel, Sand, and Clay (Qa) (Holocene)

Alluvial gravel, sand, and clay (Qa) is Holocene in age (approximately less than 11,700 years old). Holocene-age alluvial gravel, sand, and clay (Qa) is mapped at the surface along modern drainages at the west and south side of the solar project site (Figure 3.7-1).

Holocene-age deposits that are less than approximately 5,000 years old are typically too young to contain significant fossil resources (Society of Vertebrate Paleontology [SVP], 2010). Although Holocene-age alluvial gravel, sand, and clay (Qa) may comprise, in part, sediments greater than 5,000 years old, they are considered to have a low potential for producing significant paleontological resources. However, these deposits may overlies sensitive, older (i.e., Pleistocene- and Cretaceous-age) deposits at variable depths.

Older Alluvial Gravel and Sand (Qoa) (Pleistocene)

Older alluvial gravel and sand (Qoa) is Pleistocene in age (approximately 2.59 million to 11,700 years old). Pleistocene-age older alluvial gravel and sand (Qoa) is mapped at the surface along the western and northern margins of the solar project site (Figure 3.7-1).

Numerous fossil taxa have been recovered from Pleistocene-age deposits of Merced County, many at the nearby San Luis Dam and San Luis Canal, including specimens of extinct bird (*Aves*), bison (*Bison*), camel (*Camelops*), elephant (*Elephas*), horse (*Equus*), ground sloth (*Glossotherium harlani*), American mastodon (*Mammuthus americanum*), and Colombian mammoth (*Mammuthus columbi*).

Tulare Formation (QTt, QTm) (Late Pliocene to Early Pleistocene)

The Tulare Formation is late Pliocene to Pleistocene in age and consists of alluvial claystone (QTt) and marl (QTm). Portions of the Tulare Formation within the Project area are specifically identified as being early Pleistocene to possibly latest Pliocene in age (approximately 3.6 million to 0.8 million years old) by Dibblee and Minch (2007). These two members of the late Pliocene- to early Pleistocene-age Tulare Formation are mapped on the east end of the solar project site (Figure 3.7-1).

Numerous fossil taxa have been recovered from the Tulare Formation in Alameda, Fresno, Kings, Kern, and San Joaquin counties including specimens of extinct birds (*Aves; Branta*), fishes (*Chondrichthyes, Osteichthyes, Orthodon, Acipenser, Archoplites*), canid (*Borophagus diversidens*), saber-tooth cat (*Ischyrosmilus ischyurus*), horse (*Equus occidentalis*), dolphin (*Parapontoporia*), turtle (*Actinemys marmorata*), and tortoise (*Geochelone*).

Moreno Shale (Km) (Latest Cretaceous)

The Moreno Shale is latest Cretaceous in age (approximately 100.5 million to 66 million years old) and is the upper formation of the Chico Group (Anderson and Pack, 1915). Moreno Shale (Km) is mapped at the surface in the central portion of the solar project site (Figure 3.7-1).

Numerous fossil vertebrate taxa have been recovered from the Moreno Formation in Merced, Fresno, Siskiyou, and Stanislaus counties including specimens of extinct sharks (*Odontaspis, Hepartranchias*), fishes (*Enchodus ferox, Saurodon, Bonnerichthys gladius, Protosphyrina*), mosasaur (*Halisaurus, Plesiotylosaurus crassidens, Plotosaurus bennisoni, Plotosaurus tuckeri, Prognathodon waiparaensis*), plesiosaur (*Hydrotherosaurus alexandrae, Morenosaurus stocki*), terrestrial turtle (*Basilemys*), and sea turtle (*Euclastes*). In addition, numerous invertebrate and plant fossils has been recovered as well (Paleo Solutions 2022).

Panoche Formation (Kp, Kps) (Late Cretaceous)

The Panoche Formation is late Cretaceous in age (approximately 100.5 million to 66 million years old) and is the lower formation of the Chico Group (Anderson and Pack 1915). Panoche Formation (Kp, Kps) is mapped at the surface in the central-western portion of the Project area (Figure 3.7-1).

The Panoche Formation has produced one fossil vertebrate reptile (Reptilia) tooth but has produced numerous invertebrate and plant localities (Paleo Solutions 2022).

PG&E Substation Improvements

The following descriptions only summarize information that differs from information provided above for the solar project site. Unless otherwise specified, conditions are the same as those at the solar project site.

The geologic formations at the PG&E substation consist of Older Surficial Sediments (Qoa) underlain by older sediments. Topography at the PG&E substation is generally flat at an elevation of approximately 310 feet above sea level.

The primary soil units located within the PG&E substation are Ballvar loam and Damluis clay loam, which are described above for the solar project site.

Off-Site Mitigation Site

The following descriptions only summarize information that differs from information provided above for the solar project site. Unless otherwise specified, conditions are the same as those at the solar project site.

The geologic formations at the off-site mitigation site consist of Pleistocene and/or Pliocene sandstone, shale and gravel deposits, mostly loosely deposited (QPc) and upper Cretaceous sandstone, shale, and conglomerate (Ku) (Department of Conservation 2015).

The primary soil units located within the off-site mitigation site are Los Banos clay loam and Arburua loam. Los Banos clay loam is described for the solar project site. Arburua loam consists of well drained soils on hillslopes. The soils formed from residuum weathered from sandstone and shale and have moderate permeability (Natural Resources Conservation Service 2022).

Off-Site Residential Redesignation Area

The following descriptions only summarize information that differs from information provided above for the solar project site. Unless otherwise specified, conditions are the same as those at the solar project site.

The geologic formations at the off-site residential designation area consist of Panoche Formation (Kps and Kp), Moreno Shale (Km), and Holocene alluvial gravel, sand, and clay (Qa) underlain by older sediments, all of which are described for the solar project site. Because of the proximity of other geologic formations, other geologic units that underlie the solar project site could also occur here.

The primary soil units underlying the off-site residential designation area are the same as those identified and described for the solar project site.

Regulatory Setting

Federal

Earthquake Hazards Reduction Act

The National Earthquake Hazards Reduction Program (NEHRP) leads the federal government's efforts to reduce the fatalities, injuries, and property losses caused by earthquakes. Congress established NEHRP in 1977, directing that four federal agencies coordinate their complementary activities to implement and maintain the program. These agencies are the Federal Emergency Management Agency (FEMA), the National Institute of Standards and Technology, the National Science Foundation, and USGS.

The NEHRP agencies pursue the goals of the program through collaboration with each other and numerous partners. In addition to other federal agencies, program partners include state and local governments, universities, research centers, professional societies, trade associations, and businesses as well as associated councils, commissions, and consortia. NEHRP's work encompasses research, development, and implementation activities. Program research helps to advance our understanding of why and how earthquakes occur and affect the natural and built environments. The program develops strategies, tools, techniques, and other measures that can reduce the adverse effects of earthquakes; it facilitates and promotes implementation of these measures, thereby strengthening earthquake resilience among at-risk communities.

State

State of California Public Resource Code

The State of California Public Resources Code (Chapter 1.7), Sections 5097 and 30244, includes state level requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts to paleontological resources resulting from development on state lands, and define the excavation, destruction, or removal of paleontological “sites” or “features” from public lands without the express permission of the jurisdictional agency as a misdemeanor. As used in Section 5097, “state lands” refers to lands owned by, or under the jurisdiction of, the state or any state agency. “Public lands” is defined as lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof. There are no state or public lands located within the solar project site.

California and Uniform Building Codes

The 2022 California Building Standards Code (Title 24) and the Uniform Building Code provide standards for building construction as well as seismic design parameters and grading requirements. These codes contain specific requirements for seismic safety, excavation, foundations, retaining walls, and all demolition and grading activities. As discussed below, the County of Merced (County) has adopted the California Building Standards Code under Title 16, Building and Construction, of the Merced County Code.

Alquist-Priolo-Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The purpose of the Alquist-Priolo Geologic Hazards Zones Act, as summarized in the Department of Conservation Division of Mines and Geology’s SP 42, is to “prohibit the location of most structures for human occupancy across the traces of active faults and to mitigate thereby the hazard of fault-rupture.” As indicated by SP 42, “the State Geologist...is required to delineate ‘Earthquake Fault Zones’ (EFZs) along known active faults in California. Cities and counties affected by the zones must regulate certain development ‘projects’ within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting.”

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (1990) addresses non-surface fault rupture hazards such as liquefaction and seismically induced landslides. This act requires the State Geologist to designate Seismic Hazard Zones. These zones of “required investigation” referred to in the California Code of Regulations, Article 10, Section 3722, are areas shown on Seismic Hazard Zone maps where site investigations are required to determine the need for mitigation of potential liquefaction and/or earthquake-induced landslides. The earthquake zones of required investigation nearest to the solar project area are denoted in Figure 3.7-3.

Construction General Permit

Dischargers whose projects disturb 1 or more acres of soil, or whose projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the General Permit for Discharges of Stormwater

Associated with Construction Activity, Construction General Permit Order 2022-0057-DWQ. Construction activities subject to this permit include clearing, grading, and disturbances to the ground, such as stockpiling or excavation.

The Construction General Permit requires development of a Stormwater Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. The SWPPP identifies the best management practices the discharger would use to protect stormwater runoff and incorporates visual, chemical, and sediment monitoring programs.

California Public Utilities Commission General Order 95

California Public Utilities Commission (CPUC) General Order (G.O.) 95 (adopted January 2020) provides general standards for design and construction of overhead electric transmission and distribution lines. Standards include, but are not limited to, rules addressing general arrangement and use of lines, grounding, clearances between electrified portions of lines and the ground or other physical structures, and vegetation management. The intent of these rules is to provide for adequate service and secure safety to persons engaged in the construction, maintenance, operation, or use of overhead lines and to the public in general. The rules are not intended to provide complete construction specifications but to embody the requirements determined to be most important from the standpoint of safety and service.

California Public Utilities Commission General Order 174

CPUC G.O. 174, adopted in 2012, provides rules for electric utility substations, including minimum requirements for substation design and construction and for an inspection program for substations. Specifically, G.O. 174 states that “Substations shall be designed, constructed and maintained for their intended use, regard being given to the conditions under which they are to be operated, to promote the safety of workers and the public and enable adequacy of service. Design, construction and maintenance should be performed in accordance with accepted good practices for the given local conditions known at the time by those responsible.” G.O. 174 also specifies that operators of substations must inspect their facilities as frequently as necessary to ensure the safe operation of equipment and components and maintain records of these inspections.

Local

Merced County Community and Economic Development Department, Division of Buildings and Safety

The Division of Buildings and Safety oversees and enforces federal, state, and county building codes through the issuance of permits. Operating under the seismic categories defined by the 2019 California Building Standards Code, the County requires soil reports for all Design Category D building projects, with no exceptions, and soil reports for most building projects in Category C, which, under the division’s estimation, covers the majority of unincorporated areas in the county.

Title 17 Merced County Building and Construction Code

Title 17 of the Merced County Code (County 2021) incorporates the 2019 California Building Standards Code (Title 24) and is applicable to all construction within the unincorporated county. The purpose of Title 17 of the Merced County Code is to protect the public health, safety, and welfare in unincorporated Merced County. It also establishes minimum regulations for the erection, construction, enlargement, alteration, repair, moving, removal, demolition, conversion, occupancy, equipment, use, height, area, and maintenance of all buildings and/or structures; minimum

regulations for the installation, alteration, repair, relocation, or replacement of plumbing and drainage systems; and minimum regulations for the installation, alteration, repair, relocation, or replacement of electric wiring, devices, appliances, or equipment within or on any building, structure, or premises in the county, along with associated inspections.

The following portions of Title 24 and corresponding portions of Title 17 govern installation of a solar energy system:

- California Building Code, Title 24, Part 2, Merced County Code Chapter 17.04
- California Electrical Code, Title 24, Part 3, Merced County Code Chapter 17.2020
- California Mechanical Code, Title 24, Part 4, Merced County Code Chapter 17.24
- California Plumbing Code, Title 24, Part 5, Merced County Code Chapter 17.28
- California Energy Code, Title 24, Part 6, Merced County Code Chapter 17.10

Geotechnical Investigation Requirements

Local jurisdictions typically regulate construction activities through a multistage permitting process that may require a site-specific geotechnical investigation. The purpose of the investigation is to provide a basis for the development of appropriate construction design. Site-specific geotechnical investigations are to be based on adequate test borings or excavations in the area where construction would occur and prepared by a civil engineer who is registered by the State. RRC Power & Energy prepared a geotechnical investigation for the solar project site in 2020.

Section 16.08.040 of the Merced County Code of Ordinances requires a soils report to be prepared for many improvement projects. The soils report is required to contain information indicated in the Merced County Improvement Standards and Specifications and the Merced County Storm Drainage Manual. The County also requires investigation of the soils underlying proposed areas of grading in conformance with the mandates of the California Building Standards Code.

2030 Merced County General Plan

The *2030 Merced County General Plan* (County 2013) Health and Safety Element includes the following goals and policies related to geologic and seismic hazards that are relevant to the proposed project.

- **Goal HS-1:** Minimize the loss of life, injury, and property damage of county residents due to seismic and geologic hazards.
 - **Policy HS-1.7:** Hillside Development. Discourage construction and grading on slopes in excess of 30 percent.
 - **Policy HS-1.8:** Grading Standards. Require that the provisions of the International Building Code be used to regulate projects subject to hazards from slope instability.
 - **Policy HS-1.9:** Unstable Soils. Require and enforce all standards contained in the International Building Code related to construction on unstable soils.

The *2030 Merced County General Plan* (County 2013) Recreation and Cultural Resources Element includes the following goal, policy, and program related to paleontological resources that are relevant to the proposed project.

- **Goal RCR-2:** Protect and preserve the cultural, archeological, and historic resources of the county in order to maintain its unique character.
 - **Policy RCR-2.9:** Historical and Cultural Resources Investigation, Assessment, and Mitigation Guidelines (RDR/MPSP). This policy establishes and adopts mandatory guidelines for use during the environmental review processes for private and public projects to identify and protect historical, cultural, archaeological, and paleontological resources, and unique geological features.
 - **Program RCR-B:** Historic and Cultural Resources Investigation, Assessment and Mitigation Guidelines (MPSP/SO). This program requires the County to prepare and adopt guidelines and standards for preparations of assessments pursuant to Policy RCR-2.9, with the guidelines to be consistent with Public Resources Code Section 21083.2 and CEQA Guidelines Section 15126.4(b).

Villages of Laguna San Luis Community Plan

The *Villages of Laguna San Luis Community Plan* (Community Plan) was adopted in September 2008 and provides a long-range growth and development plan for approximately 6,200 acres located west of I-5 along SR 152 and SR 33 in western Merced County (County 2008). The Community Plan includes the following policies that are applicable to geologic hazards that are relevant to the proposed project.

- **Goal 2.0:** Development on hillside areas is respectful of environmental and aesthetic qualities and ensures the preservation of public safety.
 - **Policy 2.A.1:** Prohibit uniform terraced building sites which are physically contrary to the general configuration of natural topography and which require mass grading of the majority of a residential lot.
 - **Policy 2.A.2:** Provide variety in the steepness of graded slopes and their configuration.
 - **Policy 2.A.3:** Building is not permitted within areas over 30 percent slope gradient and within other specifically designated hillside areas because of their high visibility from the community, aesthetic appeal, and due to environmental and safety concerns.
 - **Policy 2.A.4:** Grade building sites such that they appear to emerge from the natural terrain and blend into natural landforms.
 - **Policy 2.A.5:** Avoid manufactured or unnatural appearance of graded slopes by creating smooth flowing contours of varying gradients, preferably with slopes ranging from 2:1 to 5:1.
 - **Policy 2.A.6:** Avoid sharp cuts and fills and long linear slopes that exhibit an abnormally uniform grade.
 - **Policy 2.A.7:** Soften slope banks by contour grading at the tops and toes of slopes.
 - **Policy 2.A.8:** Consider designating areas for permanent open space that are identified as hazardous or unstable through site specific geotechnical studies.
 - **Policy 2.A.9:** Require geologic and geotechnical investigations by licensed geologists and geotechnical engineers for all property planned for development within the 15% or greater slope category. Research should determine at a minimum depth to bedrock, bedrock character and stability, soil properties, and potential for landsliding and liquefaction.

- **Policy 2.A.10:** Grade and landscape land in increments of workable size which can be completed during a single construction season.
- **Policy 2.A.11:** Coordinate erosion and sediment control measures with the sequence of grading and construction operations.
- **Policy 2.A.12:** Protect graded sites from both wind and water erosion utilizing accepted slope stabilization methods which may include retaining walls, hydro-seeding and vegetation applications, erosion netting, soil barrier sediment traps, and dust control sprays.
- **Policy 2.A.13:** Reduce erosion and visual impacts by using sensitively designed terracing retaining walls, and landscape design applications which incorporate a wide range of hearty vegetation.
- **Policy 2.A.14:** Limit the height of manufactured slopes to 30 feet between terraces.
- **Policy 2.A.15:** Limit slope gradients to 50% or a 2:1 ratio without a soils report and stabilization study indicating a greater permissible slope.

The Community Plan Open Space Plan includes the following goals and policies related to geologic hazards that are relevant to the proposed project.

- **Goal 1.0:** Natural features and systems are preserved as components of the Community Open Space Plan.
 - **Policy 1.C.1:** Include hillsides over 30% average slope, which are not ultimately planned to be part of residential parcels, as components of the Open Space System.
 - **Policy 1.C.2:** Consider designating areas for permanent open space that are identified as hazardous or unstable through site specific geotechnical studies (also Policy 2.A.9 in Community Design Plan).
- **Goal 3.0:** Open Space is maintained and enhanced to improve community aesthetics and provide a contrast to developed areas.
 - **Policy 3.A.1:** Maintain prominent hillsides, ridge lines, slopes over 30%, and major drainage ways for their visual value within and adjacent to the Villages community.

3.7.2 Environmental Impacts

This section describes the proposed project's potential impacts on geology, soils, and paleontological resources. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

Methods for Analysis

Geology, Soils, and Seismicity

The analysis for geology, soils, and seismicity is based on the Feasibility-Level Geotechnical Study developed for the project (ICF 2022). The study reviewed available topographic and geologic maps, published geotechnical literature, geologic and seismic data, soil data, and groundwater data, including data from the Preliminary Geotechnical Report developed for the project (RRC Power & Energy 2020).

Paleontological Resources

The analysis for paleontological resource impacts is based on the Paleontological Inventory Report developed for the project (Paleo Solutions 2022).

The analysis for paleontological resources included a review of GIS-enabled geologic mapping, a literature search, and an institutional record search (Paleo Solutions 2022). The analysis of existing data was supplemented with a pedestrian field survey. Paleontological sensitivity assignments were determined using the PFYC system (Bureau of Land Management [BLM] 2016) and best practices in mitigation paleontology (Murphey et al. 2019). For additional discussion of paleontological resources methodology, see the *Paleontological Inventory Report* (Paleo Solutions 2022) (Appendix 3.7-3).

Paleontological potential of geologic units underlying in the project area was determined using the Paleontological Fossil Yield Classification (PFYC) system developed by the Bureau of Land Management (BLM 2016). It is a predictive resource management tool that classifies geologic units on their likelihood to contain paleontological resources on a scale of 1 (very low potential) to 5 (very high potential). This system is intended to aid in predicting, assessing, and mitigating paleontological resources. The PFYC system is summarized in Table 3.7-3.

Table 3.7-3. Summary of the Paleontological Fossil Yield Classification System

BLM PFYC Designation	Assignment Criteria Guidelines and Management Summary
1 = Very Low Potential	<p>Geologic units are not likely to contain recognizable paleontological resources. Units are igneous or metamorphic, excluding air-fall and reworked volcanic ash units.</p> <p>Units are Precambrian in age.</p> <p>Management concern is usually negligible, and impact mitigation is unnecessary except in rare or isolated circumstances.</p>
2 = Low Potential	<p>Geologic units are not likely to contain paleontological resources. Field surveys have verified that significant paleontological resources are not present or are very rare.</p> <p>Units are generally younger than 10,000 years before present.</p> <p>Recent aeolian deposits.</p> <p>Sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely.</p> <p>Management concern is generally low, and impact mitigation is usually unnecessary except in occasional or isolated circumstances.</p>
3 = Moderate Potential	<p>Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence.</p> <p>Marine in origin with sporadic known occurrences of paleontological resources. Paleontological resources may occur intermittently, but these occurrences are widely scattered.</p> <p>The potential for authorized land use to impact a significant paleontological resource is known to be low-to-moderate.</p>

BLM PFYC Designation	Assignment Criteria Guidelines and Management Summary
4 = High Potential	<p>Management concerns are moderate. Management options could include record searches, pre-disturbance surveys, monitoring, mitigation, or avoidance. Surface-disturbing activities may require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action and whether the action could affect the paleontological resources.</p> <p>Geologic units that are known to contain a high occurrence of paleontological resources.</p> <p>Significant paleontological resources have been documented but may vary in occurrence and predictability.</p> <p>Surface-disturbing activities may adversely affect paleontological resources.</p> <p>Rare or uncommon fossils, including nonvertebrate (such as soft body preservation) or unusual plant fossils, may be present.</p> <p>Illegal collecting activities may impact some areas.</p> <p>Management concern is moderate to high depending on the proposed action. A field survey by a qualified paleontologist is often needed to assess local conditions. On-site monitoring or spot-checking may be necessary during land disturbing activities. Avoidance of known paleontological resources may be necessary.</p>
5 = Very High Potential	<p>Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources.</p> <p>Significant paleontological resources have been documented and occur consistently.</p> <p>Paleontological resources are highly susceptible to adverse impacts from surface disturbing activities.</p> <p>Unit is frequently the focus of illegal collecting activities.</p> <p>Management concern is high to very high. A field survey by a qualified paleontologist is almost always needed and on-site monitoring may be necessary during land use activities. Avoidance or resource preservation through controlled access, designation of areas of avoidance, or special management designations should be considered.</p>
U = Unknown Potential	<p>Geologic units that cannot receive an informed PFYC assignment</p> <p>Geological units may exhibit features or preservational conditions that suggest significant paleontological resources could be present, but little information about the actual paleontological resources of the unit or area is unknown.</p> <p>Geologic units represented on a map are based on lithologic character or basis of origin but have not been studied in detail.</p> <p>Scientific literature does not exist or does not reveal the nature of paleontological resources.</p> <p>Reports of paleontological resources are anecdotal or have not been verified.</p> <p>Area or geologic unit is poorly or under-studied.</p> <p>Bureau of Land Management (BLM) staff has not yet been able to assess the nature of the geologic unit.</p> <p>Until a provisional assignment is made, geologic units with unknown potential have medium to high management concerns. Field surveys are normally necessary, especially prior to authorizing a ground-disturbing activity.</p>

Table 3.7-4 shows the PFYC classifications for each geologic units underlying the project site based on paleontological resources retrieved from the respective formations.²

Table 3.7-4. Paleontological Sensitivity of Geologic Units Underlying the Project Site

Geologic Unit	Age	Paleontological Sensitivity
Surficial sediments (Qa)	Holocene	Low (2)
Older surficial sediments (Qoa)	Pleistocene	Moderate (3)
Tulare Formation (QTt, QTm)	Pliocene to Pleistocene	Moderate (3)
Moreno Shale (Km)	Latest Cretaceous	High (4)
Panoche Formation (Kp, Kps)	Late Cretaceous	Moderate (3)

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

Would the project:

- 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 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);
 - Strong seismic ground shaking;
 - Seismic-related ground failure, including liquefaction;
 - Landslides?
- Result in substantial soil erosion or the loss of topsoil?
- 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?
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

² See Section 3.7-1 for a description of significant paleontological resources recovered from these geologic units.

Impacts Not Evaluated in Detail

Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water. The project would not include any septic tanks or alternative wastewater disposal fixtures. Therefore, there would be *no impact*, and this impact is not evaluated further.

Impacts and Mitigation Measures

Impact GEO-1: 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? (*With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.*)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts to rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, or landslides that could result from buildout of the Community Plan. Refer to the discussions under Impacts 5.3-1, 5.3-2 and 5.3-3 on pages 5.3-22—5.3-28 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that the Community Plan area is subject to strong seismic ground shaking and related seismic hazards, which could cause seismically related ground failure. However, the Community Plan EIR determined that the potential for seismically induced liquefaction within the area is low because soils on-site are underlain by bedrock and would not be subject to the effects of liquefaction. The Community Plan EIR determined that this impact would be less than significant. The Community Plan EIR presented information about non-active faults that the EIR considered to present potential hazards, but concluded that, with implementation of Community Plan policies and Mitigation Measure 5.3-1, which requires the preparation of site-specific seismic investigations/design studies for future development projects, significant impacts associated with ground shaking and seismic hazards would be reduced to a less-than-significant level.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

A high-density/medium-density residential use of the off-site residential redesignation area instead of a low-density residential use would not change this conclusion, as the same lands would be disturbed. Geologic conditions in the vicinity have not changed appreciably since adoption of the Community Plan and Community Plan policies and Mitigation Measure 5.3-1, would apply. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction and Operation

Surface Fault Rupture and Seismic Ground Shaking

As discussed under *Surface Fault Rupture* above, the solar project site is not located within an Alquist-Priolo Fault Zone. It is located at least 5 miles from any known local fault and 20 miles from any known regional fault. Therefore, the potential for a known earthquake fault to rupture and cause substantial adverse effects at the solar project site is low, and impacts related to fault rupture would be less than significant.

The Community Plan EIR presented information about potential hazards from a non-active fault, and identified mitigation in the form of site-specific geotechnical investigation, and, if warranted, setbacks from the O'Neill Fault traces, as shown in Community Plan EIR Exhibit 5.3-3. The Community Plan did not consider the type of development proposed as a part of the current solar project. A project-specific geotechnical report was prepared for the project (Appendix 3.7-2). It considers the project area's geologic, soil, and seismic conditions and recommended specific seismic design measures for the project. The project applicant is required to incorporate these recommendations into the project design in accordance with the County's geotechnical investigation requirements. For this reason, a project-specific mitigation measure is proposed.

As discussed under the Environmental Setting, *Seismic Ground Shaking* section above, the solar project site is located in an area known to be subject to strong seismic ground shaking. Seismic ground shaking could damage future structures at the site. However, compliance with County building codes, including requirements specific to seismic safety, excavation, foundations, and grading, would make potentially adverse effects associated with strong seismic ground shaking on the solar project site unlikely. In addition, the proposed project would not include habitable structures, further reducing potential risks to people and property. None of the project features are expected to contribute to or exacerbate major geologic phenomena (i.e., strong seismic shaking) that could occur in the area. However, considering the area's geologic, soil, and seismic conditions, impacts of seismic ground shaking is potentially significant. Project-specific impacts would result, and project-specific mitigation (Mitigation Measure GEO-1, which requires application of geotechnical report recommendations related to foundation work, slope stability, and earth pressures for the solar project site) would be required to reduce impacts related to seismic shaking to a less-than-significant level. Community Plan EIR Mitigation Measure 5.3-1, which requires the preparation of site-specific seismic investigations/design studies for future development projects, applies to tentative tract map applications and would not apply to the solar project. Mitigation Measure GEO-1 provides equivalent mitigation for the solar project. Therefore, impacts from the

solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR with implementation of project-specific mitigation measures.***

Liquefaction or Other Ground Failure

The Community Plan EIR determined that liquefaction risks at the solar project site were low. As discussed above under *Liquefaction*, based on currently available information, soils at the solar project site could be subject to liquefaction in case of strong seismic ground shaking. Project-specific impacts would result, and project-specific mitigation (Mitigation Measure GEO-1, which requires application of geotechnical report recommendations related to foundation work, slope stability, and earth pressures for the solar project site) would be required to reduce the impact to a less-than-significant level. Mitigation Measure GEO-1 implements Community Plan EIR Mitigation Measure 5.3-1, which requires the preparation of site-specific seismic investigations/design studies for future development projects. Therefore, with implementation of project-specific Mitigation Measure GEO-1, impacts from the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR with implementation of project-specific mitigation measures.***

Landslide

The solar project site would be located on gently sloped terrain where risk of landslide is very low. Impacts from the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Mitigation Measure GEO-1: Implement Site-Specific Recommendations in a Geotechnical Report for the Solar Project

Prior to construction, a geotechnical report by qualified, licensed geotechnical engineer shall be prepared for the solar project as required by the California Building Code and Merced County. The geotechnical report shall include specific structural design recommendations designed to minimize potential damage to buildings and project infrastructure from seismic events. The study shall also make recommendations for foundation work, slope stability, earth pressures, and project design accordingly. The geotechnical report shall include recommendations for the building foundation design to accommodate localized settlement under structural footprints related to liquefaction settlement. All appropriate design recommendations included in the geotechnical report shall be implemented during the solar project site design and construction phases, in accordance with the County's geotechnical investigation requirements, and subject to County approval prior to the issuance of construction permits. The report shall include project design and construction recommendations to address:

- Site preparation and grading, including surface and subsurface prep work, engineered fill materials, fill placement and compaction, trench backfill, and surface drainage;
- Foundation requirements specific to the location of each component of the solar project;
- Concrete slabs-on-grade, both interior and exterior, and pavements.

Decommissioning

Decommissioning and site reclamation of the solar project site would begin after the 35-year lifespan of the solar project, expected in 2060. During decommissioning, the solar project components would be removed from the solar project site and the site would be restored to its pre-construction (i.e., vacant) condition. Therefore, decommissioning would not result in substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, or landslides. Mitigation Measure GEO-1 does not apply to decommissioning. Therefore, impacts from solar project decommissioning would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Because the portion of the solar project site that is outside of the Community Plan boundary has similar physical characteristics as the portion that is within Community Plan boundary, and would be subject to the same project-specific mitigation measure, Mitigation Measure GEO-1. Therefore, impacts for this portion of the solar project site are the same as those described above. As a result, impacts from the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR with implementation of project-specific mitigation measures.***

Off-Site Mitigation Site

The proposed project would establish an off-site mitigation site in an area of approximately 1,498 acres located south of the solar project site. No ground disturbance or construction would be required on the off-site mitigation site; rather, the site would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. Therefore, the establishment of the mitigation site would not expose people or structures to potential substantial adverse effects of seismicity. Therefore, there would be no impact from the off-site mitigation site, and impacts would not exceed the Community Plan EIR's less-than-significant conclusion. As a result, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Conditions at the PG&E substation improvement area are similar to those at the solar project site. The PG&E substation improvement area is located in an area known to be subject to strong seismic ground shaking. Seismic ground shaking could damage future structures at the site. However, compliance with CPUC general orders 95 and 174 and County building codes, including requirements specific to seismic safety, excavation, foundations, and grading, would make potentially adverse effects associated with strong seismic ground shaking on the PG&E substation improvement area site unlikely. Applicable building code and CPUC general orders 95 and 174 would also minimize the potential impacts related to liquefaction. The substation improvement area is located on gently sloped terrain where risk of landslide is very low. Therefore, impacts from the

PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. As a result, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required***

Whole Project

None of the project features are expected to contribute to or exacerbate major geologic phenomena (i.e., strong seismic shaking) that could occur in the area. However, considering the area's geologic, soil, and seismic conditions, impacts of seismic ground shaking is potentially significant. Project specific impacts would result, and project-specific mitigation (Mitigation Measure GEO-1, which requires application of geotechnical report recommendations related to foundation work, slope stability, and earth pressures for the solar project site) would be required to reduce the impact to a less-than-significant level. Implementation of Mitigation Measure GEO-1 requires application of a geotechnical report and project-specific recommendations related to foundation work, slope stability, and earth pressures for the solar project. The project applicant is required to incorporate these recommendations into the project design in accordance with the County's geotechnical investigation requirements. The off-site mitigation site would not involve placement of structures that could be affected by seismicity and expose people or structures to potential substantial adverse effects of seismicity. In addition, the PG&E substation improvements would be required to comply with CPUC general orders 95 and 174, which would minimize the potential impacts related to seismic ground shaking and liquefaction. When considering the project as a whole, impacts would be less than significant with mitigation, consistent with the Community Plan EIR conclusion. Therefore, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR with implementation of project-specific mitigation measures.***

Impact GEO-2: Result in substantial soil erosion or the loss of topsoil? (With implementation of Community Plan EIR and project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated potential erosion impacts during construction that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.3-4 pages 5.3-28—5.3-29 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that soil types in the area have a moderate to high erosion potential and excavation and grading of soil in hilly topography could result in erosion during project construction. Implementation of Community Plan Mitigation Measure 5.3-4, which requires future development to prepare grading and erosion control plans and SWPPPs, which contain specific measures to reduce erosion, would reduce erosion impacts to a less-than-significant level. To ensure that grading activities would not directly or indirectly discharge sediment into surface waters as a result of construction activities, Community Plan Mitigation Measure 5.5-1 (from the Hydrology, Drainage, and Water Quality section) would be implemented. Potential erosion impacts during operation that could result from buildout of the Community Plan was discussed under Impact 5.5-3 on pages 5.5-21—5.3-23 of the Community Plan EIR, which is incorporated by reference. Implementation of Community Plan Mitigation Measure 5.5-3, which requires BMPs for stormwater infiltration basins, would reduce the potential for long-term water quality impacts, including erosion.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

A high-density/medium-density residential use of the off-site residential redesignation area instead of a low-density residential use would not change this conclusion, as the same lands would be disturbed. Geologic conditions in the vicinity have not changed appreciably since adoption of the Community Plan. Implementation of Mitigation Measure 5.3-4, which requires preparation of grading and erosion control plans as well as SWPPPs, and Mitigation Measure 5.5-1, which ensures that grading activities would not directly or indirectly discharge sediment into surface waters, would reduce potential erosion impacts from future development in the off-site residential redesignation area. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

As discussed above under Soils, the erosion hazard at the solar project site ranges from slight to severe. Construction activities could exacerbate erosion conditions by exposing soils and adding water to the soil from dust control and runoff from new impervious surfaces. However, any project involving grading of an area greater than 1 acre that would result in discharged into waters of the United States would be required to obtain coverage under the Construction General Permit. Construction activities covered under the Construction General Permit include clearing, grading, and disturbances to the ground, such as stockpiling, or excavation. The Construction General Permit would require the development and implementation SWPPP, which includes best management practices (BMPs) to regulate stormwater runoff, including measures to prevent soil erosion (typical construction BMPs can include silt fences, straw wattles, sediment traps, gravel sandbag barriers, etc.) and loss of topsoil. Implementation of construction BMPs as part of the SWPPP and adherence to County requirements, including Community Plan Mitigation Measure 5.3-4 and project-specific Mitigation Measure WQ-1 in Section 3.10, *Hydrology and Water Quality*, which replaces Community Plan EIR Mitigation Measure 5.5-1, would reduce potential impacts associated with soil erosion and loss of topsoil. Therefore, impacts from solar project construction would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of Community Plan EIR mitigation and project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.***

Operation

Long-term operation of the solar project would involve the re-establishment of vegetation following construction, and a reduction in grazed area and to reduce the potential for soil erosion or the loss of topsoil. Erosion in areas remaining unvegetated would be similar that under existing conditions. Therefore, the solar project would not result in substantial soil erosion or the loss of topsoil; impacts from solar project operation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning and site reclamation of the solar project site may involve soil disturbance. BMPs detailed in the SWPPP such as silt fences, straw wattles, sediment traps, and gravel sandbag barriers would be implemented to prevent soil erosion and loss of topsoil, in accordance with Community Plan Mitigation Measure 5.3-4. As a result, decommissioning would not result in substantial soil erosion or the loss of topsoil; impacts would be less than significant, consistent with the Community Plan EIR conclusion. Therefore, ***with implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site that is outside of the Community Plan boundary has similar physical characteristics as the portion that is within Community Plan boundary, and would be covered by the same Construction General Permit and County requirements; as a result, impacts associated with this portion of the solar project site are the same as discussed above. With implementation of Community Plan EIR Mitigation Measure 5.3-4 and project-specific Mitigation Measure WQ-1, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Off-Site Mitigation Site

Management of the off-site mitigation site would include grazing, mowing, and targeted invasive plant management activities. Although grazing and mowing currently occur on the off-site mitigation site, these activities would be regulated through the Habitat Management Plan with implementation of the solar project. As a result, the risk of erosion would be reduced beyond baseline conditions. Livestock grazing would be conducted under a grazing management plan with specific guidance on grass height and residual dry matter (RDM) on the site to protect the grasslands and to allow them to continue to function as habitat. During years of extreme weather such as drought or above average rainfall, the grazing intensity would be adjusted to properly meet the grass height and RDM criteria. Therefore, impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Conditions at the PG&E substation improvements site are similar to those at the solar project site. Implementation of construction BMPs as part of the SWPPP and adherence to County requirements and CPUC general order 95 and 174 would reduce potential impacts associated with soil erosion and loss of topsoil because standard erosion control measures and BMPs would restrict soil erosion and minimize the loss of topsoil. In addition, PG&E AMM/BMPs would be implemented to minimize erosion impacts, as further discussed in Section 3.10, *Hydrology and Water Quality* (Impact WQ-1). Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Long-term operation of the solar project would involve the re-establishment of vegetation and a reduction in grazed area. As a result, soil erosion or the loss of topsoil is anticipated to be reduced. In addition, the risk of erosion would be reduced below baseline conditions at the off-site mitigation site because grazing and mowing would be regulated through the Habitat Management Plan. Implementation of construction BMPs as part of the SWPPP and adherence to County requirements, including Community Plan Mitigation Measure 5.3-4 and project-specific Mitigation Measure WQ-1 (for the solar project), as well as CPUC general orders 95 and 174 (for the PG&E substation improvements), would reduce potential impacts associated with soil erosion and loss of topsoil. Based on the analysis above, when considering the project as a whole, impacts would be less than significant with mitigation, consistent with the Community Plan EIR conclusion. ***With implementation of Community Plan EIR and project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.***

Impact GEO-3: 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? (*With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.*)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential for landslide, lateral spreading, subsidence, liquefaction or collapse that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.3-2, 5.3-3, and 5.3-5, on pages 5.2-24—5.2-30 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that the area is considered to be a relatively high ground shaking zone, which could cause seismic-related ground failure, including liquefaction. However, the potential for seismically-induced liquefaction within the area is low because soils on-site are underlain by bedrock and would not be subject to the effects of liquefaction. This impact would be less than significant. However, ground shaking, as a result of seismic activity from nearby or distant earthquake faults, could cause seismic-related ground failure, including landslides in areas where hills are present. Implementation of Community Plan Mitigation Measure 5.3-1 would require grading plans and structure designs to be consistent with County building policies, minimizing the potential risks of seismically-induced landslides to levels

consistent with current safety standards. The Community Plan EIR also found that the Community Plan area includes soils that exhibit the potential to subside. Implementation of Community Plan Mitigation Measure 5.3-1 would require foundation design specifications tailored specifically to project site soils to minimize soil conditions consistent with County building standards, which would reduce impacts associated with subsidence or compression of unstable soils. The Community Plan EIR also included Community Plan Mitigation Measure 5.3-3, which requires any unstable or hazardous slopes identified during the geotechnical investigation required under Community Plan Mitigation Measure 5.3-1 to be designated as permanent Open Space, and Community Plan Mitigation Measure 5.3-5, which requires the geotechnical engineering study required as part of Mitigation Measure 5.3-1 to make recommendations to address on-site hazards related to subsidence or compression of unstable soils. Therefore, the Community Plan EIR concluded that impacts related to landslide, lateral spreading, subsidence, liquefaction or collapse would be less than significant with mitigation.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change covering the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

A high-density/medium-density residential use of the off-site residential redesignation area instead of a low-density residential use would not change this conclusion, as the same lands would be disturbed, and Community Plan policies and Mitigation Measure 5.3-1 would apply. Geologic conditions in the vicinity have not changed appreciably since adoption of the Community Plan. Therefore, impacts from the off-site residential redesignation would be less than significant with implementation of Community Plan mitigation, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction and Operation

There are no open faces toward which any liquefied soil could flow, so there is no risk of lateral spreading. In addition, the solar project site would be located on gently sloped terrain where risk of landslide is very low. The area is not subject to subsidence. Major excavation could create a situation in which excavated vertical walls could be susceptible to collapse. However, the solar project does not include such excavation. Foundations for the solar project would include driven pile or drilled shaft foundations for heavily loaded structures. Spread footings and mat foundations would be used for lightly loaded structures. Further, the solar project does not include earth moving that would cause collapse. Liquefaction is discussed under Impact GEO-1. Soils at the solar project site could be subject to

liquefaction, and impacts are potentially significant. Community Plan Mitigation Measures 5.3-1, 5.3-3, and 5.3-5 apply to tentative map applications, and as such, are not applicable to the solar project. Project specific impacts would result, and project-specific mitigation (Mitigation Measure GEO-1, which requires application of a geotechnical report and project-specific recommendations related to foundation work and earth pressures which would reduce the risk of liquefaction) would be required to reduce the impact to a less-than-significant level. Mitigation Measure GEO-1 implements Community Plan EIR Mitigation Measures 5.3-1, 5.3-3, and 5.3-5. Therefore, impacts from solar project construction and operation would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Decommissioning

Decommissioning and site reclamation of the solar project site would begin after the 35-year lifespan of the solar project, expected in 2060. During decommissioning, the solar project components would be removed from the solar project site and the site would be restored to its pre-construction (i.e., vacant) condition. Therefore, decommissioning would not result in landslide, lateral spreading, subsidence, liquefaction or collapse; Mitigation Measure GEO-1 does not apply to decommissioning. Impacts from solar project decommissioning would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site outside the Community Plan boundary has physical characteristics similar to those associated with the portion within the Community Plan boundary and therefore would be subject to the same project-specific mitigation measure, Mitigation Measure GEO-1, which implements Community Plan EIR Mitigation Measures 5.3-1, 5.3-3, and 5.3-5. Therefore, impacts for this portion of the solar project site are the same as those described above.; as a result, impacts associated with this portion of the solar project site are the same as discussed above. Therefore, impacts from the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Off-Site Mitigation Site

Establishment of the off-site mitigation site would include an area of grassland habitat. The habitat area would be placed into a conservation easement in perpetuity and managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. The off-site mitigation site would not involve any excavation or grading. Therefore, there would be no increased risk of soil collapse. Impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Conditions at the PG&E substation improvements site are similar to those at the solar project site. PG&E substation improvements involve installing new electric power equipment in and around an existing substation. The PG&E substation improvements would result in a permanent ground

disturbance of approximately 10.3 acres. The PG&E substation improvements site would be located on gently sloped terrain where risk of landslide is very low. However, construction staging and operations associated with the PG&E substation improvements could potentially be located on soils vulnerable to liquefaction. As discussed in Subsection 2.3.3 in Chapter 2, *Project Description*, PG&E will implement the following standard practice AMM/BMP to avoid and minimize impacts on unstable soils:

- PG&E AMM/BMP-26: Geotechnical Report with Soil Performance Standards – Implement a site-specific geotechnical investigation to develop conclusions and recommendations for final design and establish soil stability measures to implement during construction activities.

Compliance with International Building Code standards related to construction on unstable soils, would also reduce potential impacts associated with liquefaction. The California Building Code incorporates the International Building Code and requires the preparation of a geotechnical report. The geotechnical report would make recommendations related to foundation work and earth pressures to reduce the risk of liquefaction. In addition, compliance with CPUC general orders 95 and 174 and County building codes, including requirements specific to excavation, foundations, and grading, would make potentially adverse effects associated with unstable soils on the PG&E substation improvement area site unlikely. Applicable building code and CPUC general orders 95 and 174 would also minimize the potential impacts related to liquefaction. Therefore, with implementation of PG&E standard AMMs/BMPs, impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

As discussed above for the individual project components, no excavation or earth moving is anticipated, so there would be no increased risk of soil collapse. Spread footings and mat foundations would be used for lightly loaded structures for the solar project. The solar project site could be subject to liquefaction, and impacts are potentially significant. Implementation of Mitigation Measure GEO-1 requires application of a geotechnical report and project-specific recommendations related to foundation work and earth pressures which would reduce the risk of liquefaction. Mitigation Measure GEO-1 implements Community Plan EIR Mitigation Measures 5.3-1, 5.3-3, and 5.3-5. In addition, there are no open faces toward which any liquefied soil could flow, so there is no risk of lateral spreading. The area is not subject to subsidence. The off-site mitigation site would not involve excavation or grading; therefore, there would be no increased risk of soil collapse. PG&E substation improvements site would be located on gently sloped terrain where risk of landslide is very low. Implementation of PG&E standard AMM/BMP related to foundation work and unstable soils would reduce the risk of liquefaction. Project specific impacts would result, and project-specific mitigation would be required to reduce the impact to a less-than-significant level. Impacts from the off-site residential redesignation would be less than significant with implementation of Community Plan EIR mitigation. Therefore, when considering the project as a whole, impacts would be less than significant, consistent with the Community Plan EIR. ***With implementation of Community Plan and project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Impact GEO-4: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? (With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts of expansive soils that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.3-6 on pages 5.3-30—5.3-31 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that soils on portions of the Community Plan area are moderately to highly susceptible to expansive soil behavior. In addition, the groundwater table in low-lying areas is shallow, which enhances the potential for shrink and swell. Implementation of Community Plan Mitigation Measure 5.3-1 would require future development to prepare comprehensive final geotechnical reports to identify expansive soils and recommend proper design and engineering techniques for project site structures consistent with County building standard, which would reduce impacts associated with expansive soils. The Community Plan EIR also included Community Plan Mitigation Measure 5.3-6, which required the geotechnical engineering study required as part of Mitigation Measure 5.3-1 to make recommendations to address on-site hazards related to expansive soils. Therefore, the Community Plan EIR concluded that expansive soil impacts would be less than significant with mitigation.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from single-family residential use to high-density/medium-density residential use.

A high-density/medium-density residential use of the off-site residential redesignation area instead of a low-density residential use would not change this conclusion, as the same lands would be disturbed. Future development would continue to be subject to Community Plan Mitigation Measure 5.3-6, which calls for the geotechnical engineering study required as part of Mitigation Measure 5.3-1 to include recommendations for expansive soil. Geologic conditions in the vicinity have not changed appreciably since adoption of the Community Plan. Therefore, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction and Operation

Soils at the solar project site range from low to high in expansiveness. Structures, including slab foundations, that are constructed on soils with high expansiveness, specifically Los Banos clay loam, Damluis clay loam, and Ayar clay at the solar project site, could be damaged from shrink-swell soil movement during wetting and drying processes from changes in precipitation. Impacts related to expansive soils are potentially significant. Project specific impacts would result, and project-specific mitigation (Mitigation Measure GEO-1, which requires application of geotechnical report project-specific recommendations related to foundation work, as required by the County) would be required to reduce the impact to a less-than-significant level. All grading and construction onsite would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the recommendations provided by the California registered professional engineer in accordance with California and Merced County Building Code requirements. The required measures would encompass site preparation, such as treatment of expansive soils or replacement with engineered fill. These measures will ensure that project design and engineering account for the specific soils encountered at the project site, including expansive soils. Mitigation Measure GEO-1 implements Community Plan EIR Mitigation Measures 5.3-1 and 5.3-6, which, as previously discussed, do not apply to the solar project. Therefore, impacts from solar project construction and operation would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Decommissioning

Decommissioning and site reclamation of the solar project site would begin after the 35-year lifespan of the solar project. Soils on portions of the project site are moderately to highly susceptible to expansive soil behavior. As noted above, structures erected at the solar project site would be designed to withstand expansive soil behavior. Removal of these structures during project decommissioning would further reduce risks to life or property. Mitigation Measures GEO-15.3-1 and 5.3-6 do not apply to decommissioning because they pertain to the design phase of the project. Therefore, impacts from solar project decommissioning would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site outside the Community Plan boundary has physical characteristics similar to those associated with the portion within the Community Plan boundary; this portion of the project would also be subject to Mitigation Measure GEO-1, which implements Community Plan EIR Mitigation Measures 5.3-1 and 5.3-6. As a result, impacts associated with this portion of the solar project site are the same as discussed above. Impacts from the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Off-Site Mitigation Site

Off-site mitigation would not involve placement of structures that could be affected by expansive soils. Mitigation Measure GEO-1 is specific to the solar project and would not apply to the off-site mitigation site. Therefore, impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Conditions at the PG&E substation improvements site are similar to those at the solar project site. Construction staging and operations associated with the PG&E substation improvements could potentially be located on expansive soils. As discussed in Subsection 2.3.3 in Chapter 2, *Project Description*, PG&E will implement the following standard practice AMM/BMP to avoid and minimize impacts on unstable soils:

- PG&E AMM/BMP-26: Geotechnical Report with Soil Performance Standards - - Implement a site-specific geotechnical investigation to develop conclusions and recommendations for final design and establish soil stability measures to implement during construction activities

Compliance with International Building Code standards related to construction on expansive soils, would reduce potential impacts. The California Building Code incorporates the International Building Code and requires the preparation of a geotechnical report. The geotechnical report would make recommendations related to foundation work and earth pressures to reduce the risk of expansive soils. In addition, compliance with CPUC general orders 95 and 174 and County building codes, including requirements specific to excavation, foundations, and grading, would make potentially adverse effects associated with expansive soils on the PG&E substation improvement area site unlikely. Applicable building code and CPUC general orders 95 and 174 would also minimize the potential impacts related to expansive soils by providing design and construction standards to ensure safe operation of electrical generation and transmission facilities. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Soils at the project site range from low to high in expansiveness. Implementation of Mitigation Measure GEO-1 requires application of a geotechnical report and project-specific recommendations during construction activities, applicable building codes would minimize the potential effects associated with expansive soils. Mitigation Measure GEO-1 implements Community Plan EIR Mitigation Measures 5.3-1 and 5.3-6. No structures would be placed at the off-site mitigation site that could be affected by expansive soils. Implementation of PG&E standard AMM/BMP related to foundation work and unstable soils would reduce risks associated with expansive soils. Project specific impacts would result, and project-specific mitigation would be required to reduce the impact to a less-than-significant level. Impacts from future development within the off-site residential redesignation area would be mitigated with implementation of Community Plan EIR mitigation measures. Therefore, when considering the project as a whole, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of Community Plan and project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Impact GEO-5: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (With implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts on paleontological resources that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.3-8 on page 5.3-32 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that unknown paleontological resources could occur in sediments of the Los Banos, Tulare, Corcoran Clay, and Moreno Formations that underlie portions of the off-site residential redesignation area. Construction activities in these areas could disturb unknown subsurface paleontological resources. Implementation of Community Plan EIR Mitigation Measure 5.3-8 would result in avoidance of damage to, and further study of any paleontological resources that are encountered. Therefore, the Community Plan EIR concluded that impacts on paleontological resources would be less than significant with mitigation.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

A high-density/medium-density residential use of the off-site residential redesignation area instead of a low-density residential use would not change this conclusion, as the same lands would be disturbed. Future development in the off-site residential redesignation area would continue to be subject to Community Plan Mitigation Measure 5.3-8. Geologic conditions in the vicinity have not changed appreciably since adoption of the Community Plan. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

As discussed in the Paleontological Inventory Report prepared for the solar project (Appendix 3.7-3), activities that would involve ground disturbance on geologic units with moderate and high paleontological sensitivity could directly damage significant paleontological resources. Ground-disturbing construction activities include grading and trenching. Because most of the solar project site is mapped as being located on surficial units with moderate and high paleontological sensitivity, and

any surficial units mapped as having low paleontological sensitivity are likely underlain by geologic units with moderate or high paleontological sensitive, substantial grading and excavations throughout the entirety of the solar project site have potential to damage significant paleontological resources.

Implementation of Community Plan EIR Mitigation Measure 5.3-8 requiring in avoidance of damage to, and further study of any paleontological resources that are encountered, would reduce this impact to a less-than-significant level. Therefore, impacts from the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.***

Operation

No operational impacts are anticipated since the solar project would not increase public access to the site and ongoing operations of the solar project would not involve ground disturbance.

Decommissioning

Activities that would involve ground disturbance on geologic units with moderate and high paleontological sensitivity could directly damage significant paleontological resources. Ground-disturbing construction activities include grading and trenching as well as grading that would occur during project decommissioning. Most of the solar project site is mapped as being located on surficial units with moderate and high paleontological sensitivity. Substantial grading and excavations during decommissioning have potential to damage paleontological resources. For the reasons described above, Community Plan EIR Mitigation Measure 5.3-8 would reduce this impact to a less-than-significant level. Therefore, impacts from the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site that is outside of the Community Plan boundary has similar physical characteristics as the portion that is within Community Plan boundary, and would be subject to the same mitigation. As a result, impacts associated with this portion of the solar project site are the same as discussed above. Implementation of Mitigation Measure 5.3-8 would avoid damage to paleontological resources that are encountered; it would also require further study. Impacts from the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Off-Site Mitigation Site

No ground disturbance is anticipated at the off-site mitigation site. Therefore, there is a negligible potential for unearthing and damaging significant paleontological resources. Therefore, impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The PG&E Substation Improvements would be located adjacent to the solar project site. It is likely that these improvements would be located on similar geologic units to those at the solar project site. Activities would include installation of equipment and moving the fence line. In addition, up to approximately 10 structures would be installed on substation property to support a new, 230 kV transmission line connecting the substation facilities to the adjacent solar project. While grading is not expected to be extensive, any grading or trenching in geologic units with moderate or high paleontological sensitivity has potential to disturb significant paleontological resources. However, PG&E implements standard avoidance and minimization measures (AMMs) and BMPs during construction and operation of projects in its service territory. The following AMM/BMPs would be implemented during construction to avoid and/or minimize impacts on paleontological resources (see Chapter 2 for more details):

- PG&E AMM/BMP-11: Retain a Qualified Paleontological Principal Investigator. A paleontological resources principal investigator who meets the standards set forth by the Society of Vertebrate Paleontology will be retained to ensure that all measures related to paleontological resources are properly implemented.
- PG&E AMM/BMP-12: Inadvertent Discoveries. If paleontological resources are discovered during construction activities, specific procedures will be followed.
- PG&E AMM/BMP-13: Paleontological Construction Monitoring. Paleontological monitors, approved by the paleontological resources principal investigator, will be retained to conduct monitoring of the initial ground-disturbing activities.
- PG&E AMM/BMP-14: Fossil Recovery. In the event that unique paleontological resources are encountered, protection and recovery of those resources may be required.

Impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

The whole project would be located on geologic units with moderate and high paleontological sensitivity. Ground-disturbing construction activities could directly damage significant paleontological resources. Any grading or trenching in geologic units with moderate or high paleontological sensitivity also has potential to disturb significant paleontological resources. The solar project impact would be significant. For the reasons described above and in the Community Plan EIR, Community Plan EIR Mitigation Measure 5.3-8 would reduce this impact to a less-than-significant level. No new impacts are anticipated on the Off-Site Mitigation Site. AMMs/BMPs would be implemented on the PG&E Substation Improvements site, therefore PG&E Substation Improvement impacts would be less than significant. Therefore, when considering the project as a whole, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR, and no additional mitigation would be required.***

3.7.3 References Cited

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3.8 Greenhouse Gas Emissions

This section identifies and evaluates the project’s potential impacts on greenhouse gas emissions, including the potential for short- and long-term GHG impacts associated with construction and operation of the proposed project. It also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site General Plan amendment are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Relevant technical documentation used in this analysis includes:

- *Air Quality Technical Report, Las Camas Solar Project (AQR) (ICF 2024) (Appendix 3.3-1)*

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. No comments related to greenhouse gas emissions were received.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR (General Plan EIR)* and the *Villages of Laguna San Luis Community Plan EIR (Community Plan EIR)*. Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.8.1 Existing Conditions

Environmental Setting

Physical Scientific Basis of Greenhouse Gas and Climate Change

Certain gases in the earth’s atmosphere, classified as GHGs, play a critical role in determining the earth’s surface temperature. Solar radiation enters the atmosphere from space. A portion of the radiation is absorbed by the earth’s surface, and a smaller portion of this radiation is reflected toward space. The absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead “trapped,” resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on Earth.

Prominent GHGs contributing to the greenhouse effect are CO₂, methane, nitrous oxide (N₂O), HFCs, perfluorocarbons (PFCs), and SF₆. These six gases are also identified as GHGs in Section 15364.5 of the State CEQA Guidelines. Human-caused emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as *global climate change* or *global warming*. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 were caused by the anthropogenic increase in GHG concentrations and other anthropogenic forcing (IPCC 2014).

Since the Industrial Revolution (1760–1840), increases in fossil-fuel combustion and deforestation have exponentially increased concentrations of GHGs in the atmosphere. Rising atmospheric concentrations of GHGs in excess of natural levels enhance the greenhouse effect, which contributes to global warming of the earth's lower atmosphere. This warming induces large-scale changes in ocean-circulation patterns, precipitation patterns, global ice cover, biological distributions, and other changes to the earth's system that are collectively referred to as *climate change*.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas most pollutants with localized air-quality effects have relatively short atmospheric lifetimes (approximately 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere long enough to be dispersed around the globe. Although the lifetime of any GHG molecule depends on multiple variables and cannot be determined with any certainty, it is understood that more CO₂ is emitted into the atmosphere than is removed from the atmosphere (i.e., *sequestered*) by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO₂ emissions, approximately 55 percent are estimated to be sequestered through ocean and land uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO₂ emissions remain stored in the atmosphere (IPCC 2013).

No single project alone would measurably contribute to an incremental change in the global average temperature or to global or local climates or microclimates. From the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative.

Principal Greenhouse Gases

The GHGs listed by the Intergovernmental Panel on Climate Change (IPCC—CO₂, methane, N₂O, HFCs, PFCs, and SF₆—IPCC 2014) are discussed in this section in order of abundance in the atmosphere, and the principal characteristics surrounding these pollutants are discussed below. California law and the State CEQA Guidelines contain a similar definition of GHGs (Health and Safety Code Section 38505(g); 14 CCR 15364.5). Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic sources. Consequently, the primary GHGs of concern associated with the proposed project are CO₂, methane, N₂O, and SF₆. Note that HFCs and PFCs are not discussed because those gases would be insignificant or are primarily generated by processes that are not anticipated as part of the proposed project.

- **Carbon Dioxide (CO₂)** enters the atmosphere through the burning of fossil fuels (e.g., oil, natural gas, coal), solid waste, trees and wood products, respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). CO₂ is also sequestered when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH₄)** is emitted during the production and transport of coal, natural gas, and oil. Methane also results from livestock emanations and other agricultural practices and by the decay of organic waste in municipal solid-waste landfills.
- **Nitrous Oxide (N₂O)** is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
- **Sulfur Hexafluoride (SF₆)** is used in gas-insulated switchgear and is emitted from leaks.

Methods have been set forth to describe emissions of GHGs in terms of a single gas to simplify reporting and analysis. The most commonly accepted method to compare GHG emissions is the global warming potential (GWP) methodology defined by the IPCC (IPCC 2007). IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of carbon dioxide equivalent (CO₂e), which compares the gas in question to that of the same mass of CO₂ (which has a GWP of 1, by definition). The GWP values used in this report are based on the IPCC Fourth Assessment Report and United Nations Framework Convention on Climate Change reporting guidelines and are defined in Table 3.8-1 (IPCC 2007). The Fourth Assessment Report GWP values are consistent with those used in CARB's 2020 California GHG inventory (CARB 2022b) and *the 2022 Scoping Plan for Achieving Carbon Neutrality* (CARB 2022c).

Table 3.8-1. Lifetimes, Global Warming Potentials, and Atmospheric Abundances of Select Greenhouse Gases

Gas	GWP (100 years)	Lifetime (years) ¹	Atmospheric Abundance
CO ₂	1	50–200	400 ppm
CH ₄	25	9–15	1,834 ppb
N ₂ O	298	121	328 ppb
SF ₆	22,800	3,200	7.8 ppt

Sources: IPCC 2007; CARB 2022c.

¹ Defined as the half-life of the gas.

CO₂ = carbon dioxide; CH₄ = methane; GHG = greenhouse gas; GWP = global warming potential; N₂O = nitrous oxide; ppm = parts per million; ppb = parts per billion; ppt = parts per trillion; SF₆ = sulfur hexafluoride.

Greenhouse Gas Inventory

A *GHG inventory* is a quantification of all GHG emissions within a selected physical and/or economic boundary. GHG inventories can be performed on a large scale (e.g., for global and national entities) or on a small scale (e.g., for a particular building or person). Although many emissions processes are difficult to evaluate, several agencies have developed tools to quantify emissions from certain sources.

As discussed previously, GHG emissions are attributable in large part to human activities. The total GHG inventory for California in 2020 was 369.2 million metric tons of carbon dioxide equivalents (MMTCO₂e; CARB 2022a). This is nearly 62 MMTCO₂e less than the 2020 target of 431 MMTCO₂e. Table 3.8-2 summarizes a breakdown of the statewide GHG inventory for California.

Based on the breakdown shown in Table 3.8-2, the consumption of electricity in California accounts for approximately 16 percent of the state's GHG emissions.

Table 3.8-2. Statewide Greenhouse Gas Emissions by Economic Sector for 2020¹

Sector	Percent
Transportation	38
Industrial	23
Electricity generation (in state)	11
Electricity generation (imports)	5
Agriculture	9
Residential	8
Commercial	6

Sources: CARB 2022a.

¹ The total emissions inventory for California in 2020 was 369.2 million metric tons of carbon dioxide equivalent.

The mix of renewable technologies related to electricity production within California is composed of wind, solar PV, solar thermal, hydroelectric, geothermal, and biomass. In 2021, California was the nation's top producer of electricity from solar, geothermal, and biomass energy. In 2021, California was the fourth-largest electricity producer in the nation, but the state was also the nation's second-largest consumer of electricity and received about 30 percent of its electricity supply from generating facilities outside of California (USEIA 2022).

Solar Project Site

The approximately 1,741-acre solar project site is bordered by State Route (SR) 33 to the north, Interstate 5 to the east, and privately owned farmland and the Billy Wright Landfill to the south and west. Billy Wright Road borders the southeasternmost portion of the solar project site. The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming. Current uses and activities on the solar project site do not generate GHG emissions.

PG&E Substation

The PG&E Los Banos Substation is approximately 0.2 mile west of the solar project site; the substation's equipment is fenced within a footprint of approximately 47 acres. The PG&E Los Banos Substation generates limited GHG from maintenance and operation personnel occasionally traveling to the site.

Off-Site Mitigation Site

The off-site mitigation site is an area of approximately 1,498 acres, located approximately 5 miles south of the solar project site and immediately south of the Los Banos Reservoir. The off-site mitigation site is currently composed of grassland habitat used for grazing; it contains no existing uses or activities that generate GHG emissions.

Off-Site Residential Redesignation Area

As described in Chapter 2, *Project Description*, the proposed off-site residential redesignation area falls within the Villages of Laguna San Luis Community Plan area. The Community Plan designates the off-site residential redesignation area for varying residential densities, among other uses. As described in Chapter 3 of the Community Plan EIR on page 3-1, and incorporated by reference, the off-site residential

redesignation area is used primarily for active and fallowed agricultural production (e.g., alfalfa, hay, oats, vineyards, orchards) and cattle and sheep grazing. This discussion accurately describes the current existing setting at the residential redesignation area.

Regulatory Setting

GHG emissions are addressed by various international, federal, state, regional, and local government agencies, as presented in greater detail below.

International

In 2015, the 21st session of the Conference of Parties took place in Paris, France. The session included representatives from 196 parties to the United Nations Framework Convention on Climate Change. The Paris Climate Agreement included limiting global temperature increases to well below 2 degrees Celsius (°C), establishing binding commitments so all parties make Nationally Determined Contributions (NDCs), pursuing domestic policies to achieve the NDCs, and having all countries report regularly reporting their emissions and progress made in implementing and achieving their NDCs. In April 2016, 174 states and the European Union signed the agreement, including the United States. However, on November 4, 2019, former President Donald Trump formally notified the United Nations that the United States would withdraw from the Paris Climate Agreement. The United States then entered a 1-year process for exiting the deal, which officially occurred on November 4, 2020; however, President Joseph Biden, who assumed office on January 20, 2021, submitted the United States instrument of acceptance to rejoin the agreement on his first day in office (United States White House 2021). President Biden's EO No. 14008, released on January 27, 2021, begins the process of developing the United States' NDCs and ratifying the Kigali Amendment, among other things. The Kigali Amendment is a 2016 global pact under the Montreal Protocol to phase down climate-warming hydrofluorocarbons (HFCs) over the coming decades. It will ultimately fall to the United States Senate to determine whether to move forward with Kigali ratification.

The Under2 Coalition is an international coalition of jurisdictions that signed the Global Climate Leadership Memorandum of Understanding (Climate Group 2021), following former President Trump's decision to withdraw from the Paris agreement. The Under2 MOU aims to limit global warming to 2°C, limit GHGs to 80 to 95 percent below 1990 levels, and/or achieve an annual per capita emissions goal of less than 2 metric tons by 2050. The Under2 MOU has been signed or endorsed by more than 220 jurisdictions, representing 32 countries and six continents. Included among the jurisdictions is California.

Federal

In *Massachusetts et al. v. Environmental Protection Agency et al.*, 549 U.S. 497 (2007), the Supreme Court of the United States ruled that carbon dioxide (CO₂) is an air pollutant as defined under the federal CAA and that EPA has the authority to regulate GHG emissions.

In 2010, EPA started to address GHG emissions from stationary sources through its New Source Review permitting program, including operating permits for "major sources" issued under Title V of the federal CAA. Most coal- and natural gas-fired electricity-generation plants are considered major sources.

As stated in Chapter 3.8, *Air Quality*, the CAFE standards result in reductions in GHG from light-duty vehicles, the SAFE Vehicles Rule would make these standards less stringent, and the president has issued an EO requiring NHTSA and EPA to review the SAFE Vehicles Rule. On December 12, 2021, NHTSA repealed the SAFE Vehicles Rule, Part One. On December 19, 2021, NHTSA finalized its vehicle efficiency-standards rule to reach a projected industrywide target of 40 mpg by 2026, an approximately 25 percent increase over the prior SAFE Vehicles Rule. Lastly, on March 9, 2022, EPA reinstated California's authority under the CAA to implement its own GHG-emissions standards and sales mandate regarding zero-emission vehicles. This action concluded EPA's reconsideration of 2019's SAFE Vehicles Rule, Part One, by finding that actions under the previous administration, as part of SAFE-1, were decided in error; the actions are now rescinded.

State

Statewide GHG Emission Targets and the Climate Change Scoping Plan

Senate Bill (SB) 32 requires the state to reduce emissions to 40 percent below the 1990 level by 2030. Assembly Bill (AB) 1279 requires California to achieve net zero GHG emissions (i.e., reach a balance between the GHGs emitted and removed from the atmosphere) no later than 2045 and to achieve and maintain net negative GHG emissions from then on. It also mandates an 85% reduction in statewide anthropogenic GHG emissions (from 1990 levels) by 2045.

The state's plan to reach these targets are presented in periodic scoping plans. CARB adopted the 2017 Climate Change Scoping Plan in November 2017 to meet the GHG reduction requirement set forth in SB 32 (CARB 2017b). It proposes continuing the major programs of the previous Scoping Plan, including Cap-and-Trade Regulation; low carbon fuel standards; more efficient cars, trucks, and freight movement; Renewables Portfolio Standard (RPS); and reducing methane emissions from agricultural and other wastes. CARB released the 2022 Scoping Plan Update in November 2022 to identify a technologically feasible, cost-effective and equity-focused path to achieve carbon neutrality by 2045, pursuant to AB 1279 (CARB 2022c). The plan also assessing the State's progress towards meeting the GHG emissions reduction goal called for in SB 32.

Vehicle Efficiency and Zero-Emissions Standards

AB 1493 (Pavley I) required CARB to develop and implement regulations to reduce automobile and light-truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks, beginning with the model year 2009. Additional strengthening of the Pavley standards (referred to previously as *Pavley II* but now referred to as the *Advanced Clean Cars* measure) was adopted for vehicle model years 2017–2025 in 2012. Together, the two standards are expected to increase average fuel economy to roughly 54.5 miles per gallon in 2025.

In August 2022, CARB board members voted to approve the Advanced Clean Cars II proposal, which aimed to dramatically reduce emissions from passenger cars (model years 2026 through 2035). This requires an increasing proportion of new vehicles to be zero-emission vehicles, with the goal being to have 100 percent of new vehicles sold by 2035 to be zero-emission vehicles (CARB 2022d).

CARB also adopted the Advanced Clean Truck Regulation to accelerate a large-scale transition to zero-emission medium- and heavy-duty vehicles. The regulation requires zero-emission medium- and heavy-duty vehicles to make up an increasing percentage of total annual vehicle sales in California between 2024 and 2035. By 2035, zero-emission truck/chassis sales would need to amount to 55 percent of Class 2b – 3 truck sales, 75 percent of Class 4 – 8 straight truck sales, and 40

percent of truck tractor sales. By 2045, every new medium- and heavy-duty truck sold in California will be a zero-emission vehicle. Large employers, including retailers, manufacturers, brokers, and others, are required to report information about shipments and shuttle services to ensure that fleets purchase available zero-emission trucks.

Low Carbon Fuel Standard

With Executive Order (EO) S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California in 2007. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 20 percent by 2030.

The LCFS applies to fuels used by on-road motor vehicles and off-road vehicles, including construction equipment. Note that the majority of the emissions benefits due to the LCFS come from the production cycle (i.e., upstream emissions) of the fuel, rather than the combustion cycle (i.e., tailpipe). As a result, LCFS-related reductions are not included in this analysis of combustion-related emissions of CO₂.

Legislation Associated with Electricity Generation

The state has passed legislation that requires increasing use of renewables to produce electricity for consumers. Specifically, California utilities are required to generate 52 percent of their electricity from renewables by 2027 (SB 100), 60 percent by 2030 (SB 100), 95 percent by 2035 (SB 1020), 95 percent by 2040 (SB 1020), and 100 percent by 2045 (SB 100/SB 1020). SB 1020 also requires state agencies to rely on 100% renewable energy and zero-carbon resources to serve their own facilities by 2030.

Tractor-Trailer Greenhouse Gas Regulation

In 2013 CARB approved the Tractor-Trailer Greenhouse Gas Regulation to reduce GHG emissions by requiring the use of aerodynamic tractors and trailers with low-rolling-resistance tires. The regulation applies to certain Class 8 tractors manufactured for use in California and is paralleled with EPA and NHTSA heavy-duty truck standards. This regulation could reduce fuel consumption and GHG emissions from new heavy-duty trucks between 4 and 5 percent per year between 2014 and 2018 (EPA 2015).

Regional Land Use and Transportation Planning Requirements

In addition to regulations that address tailpipe emissions and transportation fuels, the state legislature has passed regulations to address the amount of driving by light-duty passenger vehicles. Since the passage of SB 375 in 2008, CARB requires metropolitan planning organizations (MPOs) to adopt plans showing reductions in GHG emissions from passenger cars and light trucks in their respective regions for 2020 and 2035 (CARB 2018). If regions develop integrated land use, housing, and transportation plans that meet the SB 375 targets, new projects in these regions can be relieved of certain CEQA review requirements. The Merced County Association of Governments (MCAG) serves as the MPO for Merced County, including all the cities in the County.

CEQA Requirements to Assess Vehicle Miles Traveled

Under SB 743 of 2013, the California Governor's Office of Planning and Research (OPR) proposed changes to the State CEQA Guidelines to require that CEQA transportation analyses move away from focusing on vehicle delay and LOS and instead focus on vehicle miles traveled (VMT). The intent

behind SB 743 is to integrate and better balance the needs of congestion management, infill development, active transportation, and GHG-emissions reduction. These changes were adopted by the California Natural Resources Agency, resulting in the addition of Section 15064.3. In support of these changes, OPR published its *Technical Advisory on Evaluating Transportation Impacts in CEQA*, which recommends that the transportation impact of a project be based on whether the project would generate a level of VMT per capita (or VMT per employee) that is 15 percent lower than that of existing development in the region. OPR's technical advisory explains that this criterion is consistent with Section 21099 of the California Public Resources Code, which states that the criteria for determining significance must "promote the reduction in greenhouse gas emissions" (OPR 2017). This metric replaces the use of delay and LOS to measure transportation-related impacts. More detail about SB 743 is provided in the Transportation Impact Analysis.

Regulation for Reducing Sulfur Hexafluoride Emissions from Gas-Insulated Switchgear

In 2010, CARB adopted the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (Section 17 CCR § 95350 *et seq.*). This regulation aims to achieve GHG reductions by reducing sulfur hexafluoride (SF₆) emissions from gas-insulated switchgear. Owners of such switchgear must not exceed a maximum allowable annual emission rate of 1.0 percent. Owners must regularly inventory their gas-insulated switchgear equipment, measure quantities of SF₆, and maintain monitoring records for at least 3 years. Additionally, owners must report SF₆ emissions annually to CARB.

In September 2020, CARB adopted Resolution 20-28 to amend the current regulation to phase out acquisition of SF₆ in gas-insulated switchgear in stages between 2025 and 2033. Under this resolution, CARB would be developing a timeline for phasing out SF₆ equipment in California and creating incentives to encourage owners to replace SF₆ equipment. The Resolution was approved by the California Office of Administrative Law on December 30, 2021 (CARB 2022e).

Local

San Joaquin Valley Air Pollution Control District

SJVAPCD recommends methods for analyzing project-generated GHGs in CEQA analyses and offers multiple potential GHG-reduction measures for land-use development projects. SJVAPCD developed thresholds of significance to provide a uniform scale to measure the significance of GHG emissions from land use and stationary source projects in compliance with CEQA and AB 32 of 2006, which mandates the reduction of statewide GHG emissions to 1990 levels by 2020. SJVAPCD's goals in developing GHG thresholds include ease of implementation, use of standard analysis tools, and emissions mitigation consistent with AB 32 (2006). However, since the passage of SB 32 (2016), which mandates a statewide emissions target of 40 percent below 1990 levels by 2030, and AB 1279 (2022), which requires California to achieve net zero GHG emissions no later than 2045, SJVAPCD has not developed new significance criteria aligned with this target.

Merced County Association of Governments Regional Transportation Plan/Sustainable Communities Strategy

In 2012, MCAG adopted its Regional Transportation Plan/Sustainable Communities Strategy for Merced County (RTP/SCS; MCAG 2022). In March 2018, CARB approved updated SB 375 targets tasking MCAG to achieve a 10-percent and a 16-percent reduction in VMT per capita by 2020 and 2035, respectively (CARB 2018).

Merced County

2030 Merced County General Plan

The following policies from the General Plan are relevant to the project (County of Merced 2013):

- **Policy AQ-1.1:** Energy Consumption Reduction. Encourage new residential, commercial, and industrial development to reduce air quality impacts from energy consumption.
- **Policy AQ-1.2:** Business Energy Reduction Strategies. Encourage all businesses to replace high mileage fleet vehicles with more efficient and/or alternative fuel vehicles; increase the energy efficiency of facilities; transition toward the use of renewable energy instead of non-renewable energy sources; adopt purchasing practices that promote emissions reductions and reusable materials; and increase recycling.
- **Policy AQ-1.5:** Climate Action Plan. Prepare a Climate Action Plan that includes an inventory of 1990 and 2010 greenhouse gas emissions, determines project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD, and identify strategies to achieve State emission reduction targets.
- **Policy AQ-1.7:** Heat Island Effect Reduction. Require increased tree canopy and reflective surface materials in order to reduce the heat island effect (i.e., increased temperatures due to heat radiation off paved surfaces and rooftops).
- **Policy AQ-1.8:** Climate Change Adaptation. Prepare appropriate strategies to adapt to climate change based on peer-reviewed scientific findings of the potential impacts.
- **Policy AQ-1.9:** Interagency Coordination. Coordinate with cities, regional, State, and Federal agencies and organizations to collaborate on a comprehensive approach to planning for climate change.
- **Policy AQ-1.10:** Public Awareness. Increase public awareness about climate change and encourage county residents and businesses to become involved in activities and lifestyle changes that will aid in reduction of greenhouse gas emissions.
- **Policy AQ-2.5:** Innovative Mitigation Measures. Encourage innovative mitigation measures and project redesign to reduce air quality impacts by coordinating with the SJVAPCD, project applicants, and other interested parties.
- **Policy AQ-2.7:** Air District Best Performance Standards. Require the County to use the Best Performance Standards adopted by SJVAPCD during the development review and decision-making process to ensure new projects meet the targets set by SJVAPCD.
- **Policy AQ-3.2:** Clean Fleet Vehicles. Require vehicle replacement practices that prioritize the replacement of older higher emission vehicles and the purchasing of the lowest emission technology vehicles, consistent with cost-effective management of the program.
- **Policy AQ-4.1:** Decrease Vehicle Miles Traveled. Require diverse, higher-density land uses (e.g., mixed-use and infill development) to decrease vehicle miles traveled.
- **Policy AQ-4.4:** Transportation Alternatives. Require employers and developers to provide employees and residents with attractive, affordable transportation alternatives, such as transit stops, van pool pick-up and drop-off locations, and biking paths/storage.
- **Policy AQ-4.5:** Public Education and Awareness. Support programs that educate the public regarding the impact of individual transportation, lifestyle, and land use decisions on air quality.

- **Policy AQ-4.6:** Non-Motorized Transportation. Encourage non-motorized transportation corridors within and between communities.
- **Policy LU-2.7:** Rural Energy Production. Allow the development of ethanol production, co-generation, solar, and wind facilities in Agricultural and Foothill Pasture areas that produce renewable energy, support agricultural-related industries, and/or use agricultural waste, provided that such uses do not interfere with agricultural practices or conflict with sensitive habitats or other biological resources.
- **Policy LU-5.B.10:** Green Building Development. Maximize use of passive and active solar and/or wind energy resources, and require incorporation of green building design and technology into new development within Urban Communities.
- **Goal LU-9:** Support and promote energy efficiency through innovative building design and land use patterns.
 - **Policy LU-9.2:** Sustainable Building Practices. Promote sustainable building practices, including the requirements of Title 24 of the California Administrative Code.
 - **Policy LU-9.5:** Energy Conservation Standards for New Construction. Cooperate with the local building industry, utilities, and air district to promote enhanced energy conservation standards for new construction.
 - **Policy AG-3.11:** Solar and Wind Energy Production Facilities. Encourage the installation of solar and wind energy production facilities in agricultural areas so long as they do not result in a tax burden to the County, do not result in permanent water transfers off of productive agricultural land, do not require cancellation of Williamson Act contracts, and do not conflict with sensitive habitats or other biological resources. In addition, approval of such facilities shall require dedications of agricultural land and habitat mitigation when impacts on these resources have been determined to be significant pursuant to CEQA, measures to control erosion, and assurances for financing decommission activities.
 - **Policy CIR-1.2:** Transportation Efficiency. Encourage transportation programs that result in more efficient energy use, reduce greenhouse gas emissions and noise levels, and improve air quality.
- **Goal NR-2:** Provide adequate and efficient energy supplies by increasing renewable energy production and energy conservation.
 - **Policy NR-2.1:** Renewable Energy Use. Promote the development and use of renewable energy resources to reduce dependency on petroleum-based energy sources.
 - **Policy NR-2.2:** Clean Alternative Energy Requirement. Encourage new electricity providers to use only clean alternative energy sources (e.g., solar, thermal, and wind).
 - **Policy NR-2.4:** Solar Power. Encourage on-site solar power use in residential, commercial, and industrial buildings, and utility-scale solar power projects in rural locations that do not harm agricultural productivity and habitat values consistent with Policies AG-3.11 and LU-2.7.
 - **Policy NR-2.9:** Energy Conservation. Encourage and maximize energy conservation and identification of alternative energy sources (e.g., wind or solar).
 - **Policy NR-2.11:** Energy-Efficient Focused Design. Encourage the use of energy-efficiency design features such as site orientation, light color building materials, and tree canopies.
 - **Policy NR-2.12:** Green Practices Education. Encourage recycling, composting, source reduction, and education efforts throughout the county for residents, businesses, institutions, and construction.

Villages of Laguna San Luis Community Plan

The Villages of Laguna San Luis Community Plan, adopted in September 2008, provides a long-range growth and development plan for approximately 6,200 acres of land west of Interstate 5 along SR 152 and SR 33 in western Merced County (County 2008). The community plan includes policies and guidance for the establishment of a new community that can accommodate growth and market demands, all while ensuring adequate public services and facilities as well as compatibility with the surrounding environment. The community plan includes the following goal that is applicable to GHGs:

- **Goal 3.0:** Develop a community that is responsive to its natural setting and promotes the conservation of water and non-renewable resources and minimizes pollutant emissions.

Merced County Climate Action Plan

In fall 2018, Merced County began development of a Climate Action Plan to outline a strategy for how the County will reduce its GHG emissions in accordance with statewide targets. The County had not finished preparing its Climate Action Plan at the time of preparing this SEIR. Preparation has been slowed, in part, due to the COVID-19 pandemic.

3.8.2 Environmental Impacts

This section describes the proposed project's potential impacts on greenhouse gas emissions. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

As discussed in Chapter 2, *Project Description*, water for project construction and operation would either be supplied by the San Luis Water District (SLWD) through existing connections to the solar project site or transported to the solar project site via 4,000-gallon water trucks from the Mid-Cal well located adjacent to SR 33 at the northwest corner of AKT's Mid-Cal property, approximately 4.4 miles north of the solar project site. The method that is ultimately implemented will depend on which approvals are granted. For purposes of the GHG analysis, the Mid-Cal well option is assumed because it would represent a worst-case analysis due to the required truck trips.

Methods for Analysis

As described in Section 3.3, *Air Quality*, of this SEIR, an Air Quality Technical Report was prepared to estimate GHG emissions, as well as criteria air pollutants and precursors, associated with construction and operation of the project. The GHGs that were quantitatively estimated for the project include CO₂, methane, and N₂O. Emissions of CO₂e were calculated using the GWP of each of these pollutants, as found in CARB's 2020 California GHG inventory (CARB 2022b), which is consistent with the IPCC Fourth Assessment Report (IPCC 2007). The project is also qualitatively evaluated for its consistency with adopted regulations, plans, and policies aimed at reducing GHG emissions. These include CARB's 2022 Scoping Plan (2022c), the RPS goals, MCAG's adopted RTP/SCS (MCAG 2022), and applicable guidance from SJVAPCD.

Project-related GHG emissions from construction and operational activities, except for indirect GHG emissions generated by electricity related to water demand, were estimated using the methodology described in Section 3.3, *Air Quality*. Methods used to calculate indirect GHG emissions from the use of electricity to supply, treat, and distribute water for dust control during project construction and panel washing during project operation, as well as displacement of GHGs from the project's

renewable energy generation, are described below. Detailed model assumptions, inputs, and outputs for these calculations can be found in Attachment A to the Air Quality Technical Report, provided as Appendix 3.3-1 to this SEIR.

Indirect GHG Emissions from Water Use

Indirect GHG emissions generated by electricity related to water demand for dust control during construction and panel washing during solar project operation were quantified using the anticipated volume of water consumption, associated electricity-demand factors, and emission factors for PG&E provided by CalEEMod. The *Revised Truck Trip Estimates for Water Delivery Technical Memorandum* estimates that 103.310 and 1.357 million gallons (Mgal) of water would be used on-site during the project's construction period and each year throughout project operation, respectively (EMKO Environmental, Inc. 2022). To calculate electricity use associated with the project's water consumption, a total water use factor of 3,500 kWh/Mgal was used. Finally, the CalEEMod default Pacific Gas & Electric (PG&E) emission factors for CO₂ (204 pounds/megawatt hour [MWh]), CH₄ (0.033 pound/MWh), and N₂O (0.004 pound/MWh), based on CARB's Local Government Operations Protocol (CARB 2010), were used to calculate GHG emissions.

Annual GHG Displacement

By generating renewable electricity for at least 35 years, the project would help California meet its RPS targets, including the state's intention of having zero-carbon and eligible renewable-energy sources supply 100 percent of the state's retail electricity consumption by 2045, as mandated by SB 100 (2018). Thus, the electricity generated by the project would replace electricity generated by fossil fuel-based sources. The associated displacement of GHGs is estimated based on the emission performance standard of 0.337 MTCO_{2e}/MWh that was recently calculated by CPUC (2021).

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

Except as provided in Public Resources Code Section 21099, would the project:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

SJVAPCD recommends a tiered approach in assessing the significance of project-specific GHG-emission increases. As the first tier, SJVAPCD deems that a project complying with an approved GHG emission-reduction plan or GHG mitigation would have a less-than-significant individual and cumulative impact on GHG emissions. Projects complying with an approved GHG emission-reduction plan or GHG-mitigation program would not be required to implement best performance standards (BPS) specified by SJVAPCD (2015). As a second tier, projects implementing BPS would be determined to have a less than significant individual and cumulative impact on GHG emissions and would not require quantifying project-specific GHG emissions. As a third tier, projects not implementing BPS would be required to quantify project-specific GHG emissions and demonstrate that the project's emissions would be reduced or mitigated by at least 29 percent, compared to Business as Usual (BAU).

SJVAPCD-recommended BPSs would not apply to the project because the project would not include any permitted stationary sources of emissions, for which SJVAPCD has established a BPS. SJVAPCD has not established a BPS for backup emergency generators, such as the one that would be used to supply electricity for cooling the project's battery-storage system during power outages (SJVAPCD 2021). Accordingly, an assessment as to whether the project would reduce operational GHG emissions by 29 percent relative to BAU conditions (third tier) is performed in this document.

Impacts and Mitigation Measures

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required)

Impacts Identified in the Previous EIR

The Community Plan EIR discussed potential impacts on greenhouse gas emissions that could result from buildout of the Community Plan. Refer to the discussion on pages 3-22 to 3-27 of the Community Plan Final EIR, which is incorporated by reference. The Community Plan EIR did not quantify the GHG impact of the Community Plan project, but recognized that the project would result in emissions of GHG and included mitigation measures that were incorporated into the project in addition to a set of Community Plan policies that reduce GHG emissions.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and community plan and an associated zone change for the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; installation of communication equipment, electrical distribution/transmission infrastructure, and substation equipment; development of public utility facilities; and construction of ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and community plan to redesignate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct construction of housing or generation of new population. It would allow the County to maintain medium-density/high-density residential development capacity. Although the proposed off-site residential redesignation would increase planned density within the residential redesignation area, it would not change the overall medium-density/high-density residential capacity of the approved Community Plan. Instead, it would redistribute already-approved residential capacity to a different area within the Community Plan area. Because the overall residential capacity would not change, there would be no increase in GHG emissions compared to what would otherwise occur with buildout of the approved Community Plan, which development was the subject of the Villages EIR. In addition, the higher density and smaller footprint of the proposed off-site residential redesignation could result in lower construction and

operational GHG emissions (e.g., more efficient construction, lower building energy use, reduced VMT, reduced heat island effects, less conversion of natural and working lands) (Boarnet et al. 2014, CARB 2022f, CARB 2022g). Future development within the off-site residential redesignation area would also be subject to the policies in the Community Plan that would serve to reduce GHG emissions. Therefore, impacts from the off-site residential redesignation would be less than significant. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction and Operation

GHG emissions associated with the solar project would be generated during construction and by operation of the solar project after it is built. Estimated levels of construction- and operation-related GHGs are presented below in Table 3.8-3 and Table 3.8-4, respectively. For ease of presentation, emissions associated with the PG&E substation improvements are also included in these tables.

Table 3.8-3. Construction-Related Greenhouse Gas Emissions

Construction Phase	GHG Emissions (MTCO _{2e})
Site Preparation	3,793
Underground Work	2,824
PV System Installation	2,230
Battery Storage System Installation	951
Substation and Gen-Tie Line Installation	949
PG&E Substation Modifications	315
Testing and Commissioning + Project Site Restoration	55
Water Consumption	33
Total¹	11,151

Sources: Attachment A to the AQR.

GHG = greenhouse gas; MTCO_{2e} = metric tons of carbon dioxide equivalent; PV = photovoltaic.

¹ Emission level estimates include indirect GHG emissions associated with water consumption for dust control.

Table 3.8-4. Annual Operational Greenhouse Gas Emissions

Source Category	Annual GHG Emissions (MTCO _{2e} /year)
Employee Vehicle Trips	134
Water Truck Trips	20
Emergency Generator	1
Water Consumption	<1
Construction Activity (amortized) ¹	319
Total Operational Activities	474

Sources: Attachment A to the AQR.

GHG = greenhouse gas; MTCO_{2e} = metric tons of carbon dioxide equivalent.

¹ Construction GHG emissions amortized over the project's 35-year lifetime.

Construction of the solar project would result in GHG emissions from off-road equipment used for vegetation removal and site preparation, grading and excavation, installation of the PV system, construction of the battery-storage facility's on-site substation, and construction of the off-site

connection to PG&E's existing Los Banos substation. GHGs would also be emitted by trucks hauling equipment and materials to and from the project site and worker commute trips. Indirect GHG emissions would also be associated with water consumption used for dust control during solar project construction.

Table 3.8-3 summarizes the estimated levels of GHGs that would be emitted during the projected 14-month construction period. These estimates are broken down by the timing of various construction phases (or the combination of construction phases that would likely overlap in timing). Detailed modeling input and parameters, assumptions, and emissions estimates are provided in Attachment A to the Air Quality Technical Report (Appendix 3.3-1).

As shown in Table 3.8-3, construction of the project would generate approximately 11,151 MTCO_{2e} over the construction period.

As part of long-term project operations, mobile-source GHG emissions would result from vehicle trips to and from the solar project site by employees and delivery and maintenance vehicles, including trucks that deliver water for periodic washing of the PV panels. Indirect GHG emissions also would result from the consumption of water for the periodic washing of PV panels.

Table 3.8-4 summarizes the annual level of operational GHG emissions associated with the solar project's first year of operation. Table 3.8-4 also includes the level of construction-related emissions amortized over the projected 35-year operation life of the solar project.

As shown in Table 3.8-4, operation of the project would result in approximately 474 MTCO_{2e}/year. However, by generating renewable electricity for at least 35 years, the project would help California meet its RPS targets, including the state's intention of having zero-carbon and eligible renewable energy sources supply 100 percent of the state's retail electricity demand by 2045, as mandated by SB 100 (2018). Thus, the renewable electricity generated by the project would replace electricity generated by fossil fuel-based sources. The associated displacement of GHGs is estimated based on the emission performance standard of 0.337 MTCO_{2e}/MWh that was recently calculated by CPUC (2021). At this rate, given that the project would generate approximately 593,208 MWh per year, it is estimated that it would displace approximately 199,911 MTCO_{2e}/year. Thus, project operational activities would generate approximately 474 MTCO_{2e}/year, while project-generated renewable electricity would displace fossil fuel-based electricity, resulting in a reduction of approximately 199,911 MTCO_{2e}/year.

In summary, the project would result in a net decrease in GHG emissions of 199,436 MTCO_{2e}/year and, therefore, not generate a substantial level of GHG emissions that would contribute to climate change. Operation of the solar project would offset the GHG emissions that would be emitted during construction. Moreover, as the project would result in a net decrease in GHG emissions of 199,436 MTCO_{2e}/year, the project would comply with the SJVAPCD third tier threshold option requiring a 29% reduction in GHG emissions from BAU. Impacts from solar project construction and operation would be less than significant. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

At the end of the operational life of the solar project (approximately 35 years), the solar project would be decommissioned, and the solar project site would be returned to existing conditions. The solar project site could then be converted to other uses in accordance with applicable land-use regulations in effect at that time. All decommissioning and restoration activities would adhere to the

requirements of the appropriate governing authorities and would be conducted in accordance with all applicable federal, state, and County regulations. A collection and recycling program would be executed to dispose of the site materials.

The solar project's decommissioning activities are evaluated qualitatively because the extent of the activities and equipment amounts for decommissioning is unknown at this time. It is anticipated that decommissioning activities would be less GHG-intensive than that of project construction. Due to the RPS regulation in the state, it is also anticipated that other sources of renewable electricity would supply power to the grid after the project shuts down. Because emissions generated from decommissioning activities are expected to be less than project construction emissions, it is expected that the project would result in a net decrease in GHG emissions over the long term. For these reasons, impacts from solar project decommissioning would be less than significant. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

GHG emissions associated with the portion of the solar project site that is outside of the Community Plan boundary are included in the analysis above.

Off-Site Mitigation Site

The project would establish an off-site mitigation site for the San Joaquin kit fox and other species, as necessary. An area of approximately 1,498 acres of grassland habitat would be placed into a conservation easement in perpetuity. The land would be managed for the benefit of the San Joaquin kit fox and other covered species as needed (i.e., continued to be grazed or mowed, no rodenticide usage, remain permeable for kit fox movement). Roadways and fencing around the perimeter would be maintained. Targeted invasive plant management activities would be necessary to prevent invasion by pest plant species. The proposed permit term is 40 years and encompasses all construction and testing activities, as well as the full operational life of the solar project and its decommissioning.

In summary, mowing and monitoring may require the operation of GHG-generating equipment and vehicles, but emissions would be minimal and short term. Moreover, no new structures would be constructed on the off-site mitigation site, and activities associated with establishment and maintenance of the mitigation site would generate GHG emissions from energy use, water consumption, or waste generation. Therefore, impacts from the off-site mitigation site would be less than significant. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The proposed project includes transmission system improvements to PG&E's Los Banos substation to connect the PG&E substation to the solar project and facilitate the delivery of power from the solar project.

Construction of the PG&E substation improvements would result in GHG emissions from off-road equipment used for installation of new electric equipment. GHGs would also be emitted by trucks hauling equipment and materials to and from the project site and worker commute trips. Indirect GHG emissions would also be associated with water consumption used for dust control during PG&E substation construction.

Construction activities associated with the PG&E substation improvements would be less GHG-intensive than those of the solar facilities and infrastructure. As shown in Table 3.8-3 above, total GHG emissions associated with construction of the PG&E substation improvements would be 315 MTCO_{2e}, much lower than GHG emissions associated with the solar project. Once operational, the PG&E substation improvements would facilitate the delivery of power from the solar facilities, playing an essential role in reducing GHG emissions by replacing electricity generated by fossil fuel-based sources. Therefore, impacts from the PG&E substation improvements would be less than significant. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, impacts from the whole project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, would be less than significant. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required)

Impacts Identified in the Previous EIR

The Community Plan EIR discussed potential impacts on greenhouse gas emissions that could result from buildout of the Community Plan. Refer to the discussion on pages 3-22 to 3-27 of the Community Plan Final EIR, which is incorporated by reference. The Community Plan EIR did not quantify the GHG impact of the Community Plan project, but recognized that the project would result in emissions of GHG and included mitigation measures that were incorporated into the project in addition to a set of Community Plan policies that reduce GHG emissions.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

For the reasons stated above under Impact GHG-1, impacts from conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs from the proposed off-site residential redesignation would be less than significant. ***No new or substantially more severe significant impacts beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction, Operation, and Decommissioning

Because the County has not completed and adopted a climate action plan at the time of writing this analysis, the project does not have the ability to be consistent with a local or regional plan adopted for the purpose of reducing the emissions of GHGs that is consistent with the statewide GHG targets mandated by SB 32 (2016) and AB 1279 (2022). However, the project is consistent with and would directly implement 2030 Merced County General Plan Policies LU-2.7: Rural Energy Production, AG-3.11: Solar and Wind Energy Production Facilities, and NR-2.4: Solar Power.

AB 32 and SB 32 established statewide goals for reducing GHG emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030, respectively. CARB adopted the AB 32 Scoping Plan as a framework for achieving AB 32 goals. The Scoping Plan outlines a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions. Many of these measures have been extended to achieve SB 32 and carbon neutrality goals by 2045.

The 2022 Scoping Plan states that California's renewable and zero-carbon energy supply goals are key to achieving carbon neutrality by 2045. As explained in Section 3.8.1, *Existing Conditions*, electricity generation is one of the main emission sectors addressed in CARB's 2022 Scoping Plan. The Scoping Plan highlights the transition to zero-carbon electricity as a critical strategy for achieving state GHG targets and climate goals, including SB 32 and carbon neutrality (CARB 2022c). SB 1020 revised California's renewable and zero-carbon energy supply goals to 90 percent by 2035, 95 percent by 2040, and 100 percent by 2045. The renewable and zero-carbon energy supply goals promote multiple objectives (e.g., diversifying the electricity supply). Increasing the renewable energy supply toward 100 percent zero-carbon energy by 2045 is designed to accelerate the transformation of the electricity sector, including investment in transmission infrastructure and system changes to allow integration of large quantities of intermittent wind and solar generation.

The proposed project would add renewable solar-generated energy to the electricity supply and, as shown in Table 3.8-4, result in a long-term net reduction in GHG emissions. The project would also include a 100-MW battery-storage system that would help the state's electricity supply-storage capabilities. Therefore, the proposed project would be consistent with the renewable and zero-carbon energy supply goals of the 2022 Scoping Plan. In addition, the project would comply with CARB's Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear (Section 17 CCR Section 95350, et seq.), thereby decreasing the mass of SF₆ that would leak from gas-insulated switchgear. For these reasons, the project would be consistent with all applicable plans, policies, and regulations adopted for the purpose of reducing GHGs, and the proposed project would help California achieve its GHG reduction goals. Therefore, impacts from construction, operation, and decommissioning of the solar project would be less than significant. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

GHG emissions associated with the portion of the solar project site that is outside of the Community Plan boundary are included in the analysis above.

Off-Site Mitigation Site

All scenarios in CARB's 2022 Scoping Plan highlight the need to prioritize natural and working land management, including management of grasslands, to protect ecosystems and enhance the ecosystem benefits (CARB 2022c). As described above, the project would establish an off-site mitigation site for the San Joaquin kit fox and other covered species, as necessary. An area of approximately 1,498 acres of grassland habitat would be placed into a conservation easement in perpetuity. The land would be managed for the benefit of the San Joaquin kit fox and other species, as necessary. Roadways and fencing around the perimeter would be maintained. Targeted invasive plant management activities would be necessary to prevent invasion by pest plant species. Thus, the project supports the state's strategy to prioritize land management, including

management of grasslands, to protect ecosystems and enhance ecosystem benefits. Moreover, the project would not include the development of any new structures or generate additional GHG emissions from energy use, water consumption, or waste generation.

In summary, mowing and monitoring may require the operation of GHG-generating equipment and vehicles, but emissions would be minimal and short term. Moreover, no new structures would be constructed on the off-site mitigation site, and activities associated with establishment and maintenance of the mitigation site would generate GHG emissions from energy use, water consumption, or waste generation. Therefore, impacts from the off-site mitigation site would be less than significant. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

As mentioned above, electricity generation is one of the main emission sectors addressed in CARB's 2022 Scoping Plan; the state legislature has passed multiple bills that establish and expand the RPS. The proposed project includes transmission system improvements to PG&E's Los Banos substation to connect the PG&E substation to the solar project and facilitate the delivery of power from the solar project. By facilitating the delivery of power from the solar project, the PG&E substation improvements is essential for replacing electricity generated by fossil fuel-based sources with renewable electricity generated by the project, which would help California meet its RPS targets. Therefore, impacts from the PG&E substation improvements would be less than significant. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, impacts from the whole project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, would be less than significant. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

3.8.3 References Cited

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3.9 Hazards and Hazardous Materials

This section identifies and evaluates the project's potential impacts related to hazards and hazardous materials, including hazards for the public or environment due to the routine transport, use, or disposal of hazardous materials; a release of hazardous materials; the emission or handling of hazardous materials within 0.25 mile of a school; development on a site included on a list of hazardous materials sites (e.g., Cortese List); interference with an adopted emergency response or evacuation plan; and/or exposure to a risk of injury or loss from wildfire. This section also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site General Plan amendment are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Relevant technical documentation used in this analysis includes the Phase I Environmental Site Assessment prepared for the project:

- *Las Camas Solar Site Phase I Environmental Site Assessment (ESA)* (KTA Associates, Inc., February 2019 (Appendix 3.9-1))
- *Solar Project Decommissioning and Reclamation Plan, Merced County, California* (Appendix 2-1)

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. Comments related to hazards and hazardous materials included concerns about electromagnetic field (EMF) radiation and disposal of the solar panels during decommissioning activities.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.9.1 Existing Conditions

Environmental Setting

Regional Setting

The project site is in a rural agricultural portion of Merced County in western San Joaquin Valley. Hazardous waste handlers and generators in Merced County include industries, businesses, public and private institutions, and households. Agricultural land use can involve the storage and

application of pesticides as well as the storage and use of fuel. Gasoline stations and other facilities that use or store solvents, chemicals, or other hazardous materials are other potential sources of hazardous materials in rural areas. These sources of hazardous materials, if encountered, can cause exposures that may result in adverse environmental and health effects.

Nearby Schools and Airports

The nearest school to the project site is Romero Elementary School, approximately 3.05 miles to the northwest at 13500 Luis Avenue in Gustine. Volta Elementary School is approximately 3.75 miles to the northwest at 24307 West Ingomar Grade in Los Banos. The nearest school to the off-site mitigation site is Charleston Elementary School approximately 4 miles west. The nearest public use airport to the solar project site is Los Banos Municipal Airport, 5.3 miles to the northeast, and the nearest private airstrip is Eagle Field, 19 miles to the southwest.

Fire Protection

As further described in Section 3.20, *Wildfire*, the solar project site is within a Moderate Fire Hazard Severity Zone (FHSZ) and under the jurisdiction of a State Responsibility Area SRA; it is also in proximity to several High FHSZs. The nearest Very High FHSZ is approximately 13 miles northwest of the solar project site and west of the San Luis Reservoir (CAL FIRE 2022). Because the solar project site is within an SRA, fire protection is provided by the California Department of Forestry and Fire Protection (CAL FIRE). The closest CAL FIRE station to the project area is Station 73 at 31011 West Gonzaga Road. Located at the base of O'Neill Forebay, the station is approximately 3.1 miles west of the solar project site. Station 71, located at 525 H Street in Los Banos, approximately 8 miles east of the solar project site, would also respond in the event of a fire (County 2007). These two stations are part of CAL FIRE's Madera-Mariposa-Merced Unit.

Electromagnetic Fields

Electric and magnetic fields (EMFs) are invisible energy fields that surround any electrical device, including electrical transmission lines. Together these fields are called EMFs. Electric and magnetic energy travels in waves that are commonly referred to as electromagnetic radiation or radiofrequency radiation. EMF indicates the presence of electromagnetic or radiofrequency energy. There are several forms of EMFs, depending on the wavelength and frequency of the radiation. The frequency is usually expressed in terms of a unit called the hertz (Hz). One million hertz is known as a megahertz (MHz). The different forms of EMFs are produced by a variety of sources, including electrical energy facilities. EMFs may also be differentiated based on the ability of the particular EMF to cause ionization, a process that can produce molecular changes that can lead to damage in biological tissue, including genetic material. Changes in genetic material may be a cause of cancer. Those types of electromagnetic radiation with enough energy to ionize biological material include X-radiation (1 trillion MHz) and gamma radiation (County 2007).

All types of electric energy facilities and appliances generate EMFs. In part because of their visibility in areas of human habitation, electric energy transmission facilities generate the greatest public concern. Electric energy facilities generate EMFs at a frequency of 60 Hz. At this frequency, the EMF is considered nonionizing and is not expected to cause molecular changes that lead to the damage of body tissue. Once emitted from the source, an EMF dissipates in a circular pattern and weakens with distance from the emitting source. Electrical fields are shielded or weakened by materials that conduct electricity (including trees, buildings, and human skin). Magnetic fields pass through most materials and are therefore more difficult to shield (County 2007). A variety of epidemiological and

laboratory studies, including those sponsored and funded by international, federal, and state organizations and agencies, have been carried out regarding EMF exposure and its potential human health risks. With regard to electric energy facilities, a connection between exposure to the type of EMF generated by electric energy facilities and childhood cancer (e.g., leukemia) has been suggested. However, studies have not concluded that there is such a connection.

Solar Project Site and PG&E Substation

The solar project site is located on approximately 1,741 acres of vacant land in an unincorporated part of the county at the southwest corner of the intersection of State Route (SR) 33/SR 152 and Interstate (I) 5. The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming. Information regarding the records review, historical use of the property, and site reconnaissance was compiled from the Phase I ESA prepared for the project (Appendix 3.9-1). Based on the results of the Phase I ESA, which are summarized below, a Phase II ESA was not recommended.

Records Review

As part of the Phase I ESA (Appendix 3.9-1), a database search compiled pursuant to Government Code Section 65962.5 was conducted by Environmental Data Resources (EDR) for the solar project site and an adjacent search radius that included the PG&E substation, proposed gen-tie line area, and off-site residential redesignation area. EDR acquires data from government agencies, including all available federal, state, regional, and local agency database listings. The Phase I ESA indicated that there are no sites listed in any hazardous materials databases within the solar project site, PG&E substation, gen-tie line area, or residential redesignation area. See Appendix 3.9-1 for a complete list of the databases searched.

Historical Use of the Property

Aerial photographs were searched as part of the Phase I ESA. The historical use of the project site appears to be the same as the existing land uses mentioned in the regional setting. No historical site uses were identified on the aerial photographs.

Site Reconnaissance

Visual reconnaissance was conducted by KTA on February 7 and 11, 2019. During the site visit, photographs of the subject property were taken. No recognized environmental conditions (RECs) were identified at the project site (Appendix 3.9-1). The term “recognized environmental condition,” as defined by American Society for Testing and Materials Standard E1527-13 refers to:

“...the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions.”

The property was inspected for the typical RECs listed below. None of the listed RECs were observed on the project site.

- Odors
- Pools of liquid
- Electric or hydraulic equipment likely to contain polychlorinated biphenyls (PCBs)

- Storage tanks
- Drums or other containers
- Pits, ponds, lagoons
- Stained soil or pavement
- Solid waste
- Wastewater discharge
- Wells or septic systems

Nearby REC Properties

The Billy Wright Landfill, which receives solid waste, is adjacent to the southeastern portion of the solar project site. The Class III landfill has been operating since 1973. The Billy Wright Landfill Monitoring Summary Report, which monitors groundwater data (Appendix 3.9-1), shows that dichlorodifluoromethane, trichloroethylene (TCE), and tetrachloroethylene (PCE) were detected in one of the monitoring wells approximately 200 yards south of the solar project site. Groundwater near this well flows primarily to the east (parallel to the solar project site) but, at a limited number of locations, also slightly to the northeast (toward the solar project site). Given that there are no monitoring wells downgradient of the well containing the contaminated groundwater, there is insufficient data for determining whether contaminants are migrating through the groundwater. Although unlikely, given this uncertainty, and the fact that dichlorodifluoromethane, TCE, and PCE are highly toxic compounds, an area potentially affected by the contamination has been designated as an REC according to the Phase I ESA. The REC, shown in Figure A-1 in the Phase I ESA (Appendix 3.9-1) is located south of Billy Wright Road and west of I-5, and does not overlap with the project site or the off-site residential redesignation area.

Off-Site Mitigation Site

The off-site mitigation site is 5 miles south of the solar project site, in an area with approximately 1,498 acres of undeveloped grassland. The off-site mitigation site is immediately south of the Los Banos Reservoir. There are no existing residences or communities within the off-site mitigation site or near the site. According to the EnviroStor database, no known USTs, LUSTs, or RECs have been identified on this site (DTSC 2023). The nearest reported LUST site is approximately a mile east of the off-site mitigation area and involved petroleum contamination of groundwater. The site was cleaned up as of 2009 and the site is no longer considered a LUST.

Off-Site Residential Redesignation Area

The off-site residential redesignation area covers approximately 202.8 acres within the Villages of Laguna San Luis Community Plan area south of the solar site and near the western and eastern portions of the Billy Wright Landfill. The off-site residential redesignation area is south of the solar project site and currently an area of primarily undeveloped grassland and passive agriculture.

The Community Plan EIR notes there are four Pacific Gas and Electric Company (PG&E) overhead electrical power transmission line rights-of-way in the off-site residential redesignation area: one 350-foot-wide transmission line that carries one set of 500 kV, one 350-foot-wide transmission line that each carries two sets of 500 kV, one 212.5-foot-wide easement that carries 230/70 kV lines, and one transmission line 200 feet wide and labeled "Path 15" that carries one set of 500 kV. They

traverse the southwestern portion of the community plan area and would remain on site following construction of the community plan area. Additional power line rights-of-way are located in close proximity to the north parcel of community plan area on the west side of SR 33, and a power line right-of-way extends from the existing PG&E electrical substation through the San Luis Reservoir State Recreation Area to the west and northwest (County 2007).

Four Phase I ESAs were prepared for the Community Plan and are incorporated by reference as detailed on page 5.4-3 in Chapter 3 of the Community Plan EIR. One of the Phase I ESAs overlaps with the off-site residential redesignation area. The discussion accurately describes the current existing setting at the residential redesignation area. It also accurately describes the existing setting in relation to hazardous materials sites found in or within the vicinity of the community plan.

Regulatory Setting

Federal

Hazardous Materials Management

The primary federal agencies with responsibility for hazardous materials management include the U.S. Environmental Protection Agency (EPA); U.S. Department of Labor, Occupational Safety and Health Administration (OSHA); and the U.S. Department of Transportation. State and local agencies often have either parallel or more stringent regulations than these federal agencies. In most cases, state law mirrors or overlaps federal law. Enforcement of these laws is the responsibility of the state or local agency to which enforcement powers are delegated.

Hazardous Materials Transportation

The U.S. Department of Transportation regulates the transport of hazardous materials on all interstate roads pursuant to its authority under the Hazardous Materials Transportation Uniform Safety Act (49 United States Code Section 5101 et seq.). The purpose of the act is to “protect against the risks to life, property, and the environment that are inherent in the transportation of hazardous material in intrastate, interstate, and foreign commerce.” In California, the California Highway Patrol and California Department of Transportation are the state agencies with primary responsibility for enforcing federal and state regulations and responding to transportation emergencies. Together, federal and state agencies determine driver training requirements, load labeling procedures, and container specifications.

Clean Air Act

Regulations under the Clean Air Act are designed to prevent accidental releases of hazardous materials. The regulations require facilities that store threshold quantities of listed regulated substances to develop a Risk Management Plan, including hazard assessments and response programs to prevent accidental releases of listed chemicals.

National Emissions Standards for Hazardous Air Pollutants

Air toxics regulations under the Clean Air Act specify asbestos-related work practices to be followed during facility demolition and renovation; such facilities include, but are not limited to, structures, installations, and buildings (excluding residential buildings with four dwelling units or fewer). The regulations, found in 40 Code of Federal Regulations (CFR) 61, Subpart M, require a thorough

inspection where demolition or renovation work will occur. Performing the work in accordance with the national emissions standards for asbestos helps to ensure that areas that are in use during the renovation will not be contaminated and the renovation areas will be free of contamination when the work is complete.

Toxic Substances Control Act and Resource Conservation and Recovery Act

The Federal Toxic Substances Control Act of 1976 and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program, administered by EPA, to regulate the generation, transport, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Amendments, which affirmed and extended the “cradle to grave” system of regulating hazardous materials and wastes.

Occupational Safety

OSHA is the agency responsible for ensuring worker safety with respect to the handling and use of chemicals in the workplace. The federal regulations pertaining to worker safety are contained in Title 29 of the CFR, as authorized in the Occupational Safety and Health Act of 1970. They provide standards for safe workplaces and work practices, including standards related to hazardous materials handling. At known or suspected soil or groundwater contamination sites, construction workers must receive training regarding hazardous materials operations, and a site health and safety plan must be prepared. The health and safety plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at the contaminated site.

North American Electric Reliability Corporation Standards

The North American Electric Reliability Corporation (NERC) is a nonprofit corporation with 10 regional reliability councils. The overarching goal of NERC is to ensure the reliability of the bulk power system in North America. To achieve its goal, NERC develops and enforces reliability standards, monitors the bulk power systems, and educates, trains, and certifies industry personnel (NERC 2020). In order to improve the reliability of regional electric transmission systems, in response to a widespread power outage that occurred on the Eastern Seaboard, NERC developed a transmission vegetation management program, which is applicable to all transmission lines operated at 200 kilovolts and above as well as lower voltage lines designated by the Regional Reliability Organization as critical to the reliability of the electric system in the region. The plan, which became effective on April 1, 2005, and was most recently updated on May 10, 2022, established requirements of a formal transmission vegetation management program. These included 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. The identified clearances must be no less than those set forth in Institute of Electrical and Electronics Engineers (IEEE) Standard 516-2009, Guide for Maintenance Methods on Energized Power Lines (IEEE 2009), which establishes minimum vegetation-to-conductor clearances to maintain the integrity of the electrical system.

State

In January 1996, the California EPA adopted regulations for implementing the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program [Health and Safety Code Section 25404 et seq.]). The program has six elements: hazardous waste generators and

hazardous waste on-site treatment, underground storage tanks, aboveground storage tanks, hazardous materials release response plans and inventories, risk management and prevention programs, and Unified Fire Code hazardous materials management plans and inventories. The plan is implemented at the local level. The Certified Unified Program Agency (CUPA) is the local agency that is responsible for the implementation of the Unified Program.

California regulations regarding hazardous materials and wastes are equal to or more stringent than federal regulations. EPA has granted the state primary oversight responsibility with respect to administering and enforcing hazardous waste management programs. State regulations require planning and management to ensure that hazardous materials are handled, stored, and disposed of properly to reduce risks to human health and the environment. Several key state laws pertaining to hazardous materials and wastes are discussed below.

Worker Safety

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the work place. The California Division of Occupational Safety and Health (known as Cal/OSHA) and the federal OSHA are the agencies responsible for ensuring worker safety in the workplace. Cal/OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices within the state. At sites known to be contaminated, a site safety plan must be prepared to protect workers. The site safety plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at the contaminated site.

Department of Toxic Substance Control

The Department of Toxic Substance Control (DTSC) regulates the generation, transport, treatment, storage, and disposal of hazardous material waste. 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 transport; and identify hazardous wastes that cannot be disposed of in landfills. These regulations also require hazardous materials users to prepare written plans, such as a hazardous materials business plan, that describe hazardous materials inventory information, storage and secondary containment facilities, emergency response and evacuation procedures, and employee training programs regarding hazardous materials. A number of agencies participate in enforcing the hazardous materials management requirements, including DTSC, the Regional Water Board, and the Merced County Department of Public Health, Division of Environmental Health, Hazardous Materials Waste Program.

Fire Protection

As discussed further in Section 3.20, *Wildfire*, California fire safety regulations apply to SRAs during times of the year with hazardous fire conditions. During the fire hazard season, these regulations restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on equipment with an internal-combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify the fire suppression equipment that must be provided on-site for various types of work in fire-prone areas. CAL FIRE has primary responsibility for fire protection within SRAs.

Hazardous Materials Management

The California Hazardous Materials Release Response Plans and Inventory Law (Business Plan Act [Health and Safety Code Section 25500 et seq.]) requires any business that handles hazardous materials at or above the following specified thresholds to prepare a Hazardous Materials Business Plan (HMBP):

- 55 gallons for liquids
- 500 pounds for solids
- 200 cubic feet (at standard temperature and pressure) for compressed gases

Electromagnetic Fields

On January 15, 1991, the California Public Utilities Commission (CPUC) initiated an investigation to consider its role in mitigating the health effects, if any, of electric and magnetic fields from utility facilities and power lines. A working group of interested parties, the California EMF Consensus Group, was created by the CPUC to advise it on this issue. The California EMF Consensus Group's fact-finding process was open to the public, and its report incorporated public concerns. Its recommendations were filed with the CPUC in March 1992. Based on the work of the California EMF Consensus Group, written testimony, and evidentiary hearings, CPUC's decision (93-11-013) was issued on November 2, 1993, to address public concern about possible EMF health effects from electric utility facilities. The conclusions and findings included the following:

We find that the body of scientific evidence continues to evolve. However, it is recognized that public concern and scientific uncertainty remain regarding the potential health effects of EMF exposure. We do not find it appropriate to adopt any specific numerical standard in association with EMF until we have a firm scientific basis for adopting any particular value.

This continues to be the stance of the CPUC regarding standards for EMF exposure. Currently, the state has not adopted any specific limits or regulations regarding EMF levels from electric power facilities.

Local

Merced County Certified Unified Program Agency

The Merced County CUPA is responsible for spills of hazardous substances such as heavy metals, pesticides, and herbicides. The CUPA is also responsible for regulatory oversight of investigations and cleanup activities at sites that have been affected by hazardous substances, other than petroleum products from underground storage tanks.

Division of Environmental Health Hazard Tracking

County of Merced (County) and state law require the reporting of unauthorized discharges of waste to waters of the state that may affect water quality. As the local enforcement agency, the Division of Environmental Health helps maintain a comprehensive database for Merced County, which, in turn, is maintained in the Regional Water Quality Control Board GeoTracker, DTSC EnviroStor, and California Integrated Waste Management Board Solid Waste Information System databases (County 2012).

The County also works with the State Water Resources Control Board (SWRCB) under the Groundwater Ambient Monitoring and Assessment Program to monitor wells that have been contaminated with nitrates and other chemicals. Also, the Division of Environmental Health provides oversight under various federal- and state-directed programs to monitor environmental conditions through 1- and 2-year inspection programs.

Merced County Fire Code

The Merced County Fire Department reviews development plans and building permits for compliance with the California Building Standards Code and the Merced County Fire Code. Merced County uses the current edition of the California Fire Code, in addition to Title 14, Natural Resources, Division 1.5, Department of Forestry, Chapter 7, Fire Protection, Sub-chapter 2, SRA Fire Safe Regulations, for projects in an SRA.

California Fire Code Section 507 requires developers to provide approved water supplies that are capable of delivering an adequate fire flow for fire protection to all premises on which facilities, buildings, or portions of buildings are constructed. A water supply may consist of reservoirs, pressure tanks, elevated tanks, water mains, or other fixed systems that are capable of supplying the required fire flow. In setting the requirements for fire flow, the fire chief may be guided by the standards published by the Insurance Services Office *Guide for Determination of Required Fire Flow*. The Merced County Fire Code Ordinance requires an annual operational permit to be on file for hazardous material storage and use.

Merced County Fire Department and Office of Emergency Services

MCFD maintains a hazardous materials emergency response team that performs emergency spill mitigation and hazardous material information research, and manages civil cost recovery for emergency expenditures.

The County OES has an Emergency Management Plan (EMP) that serves as a response and recovery coordination plan for the entire county. The EMP serves as an umbrella document that generally assesses potential emergency incidents and identifies procedures needed to remove the county's population from harm in the event of an emergency.

2030 Merced County General Plan

The Health and Safety Element of the *2030 Merced County General Plan* includes the following pertinent goals and policies:

- **Goal HS-3:** Minimize the exposure of county residents and public and private property to the effects of urban and wildland fires.
 - **Policy HS-3.1: Weed Abatement**—Encourage weed abatement programs throughout the county in order to promote fire safety.
 - **Policy HS-3.13: Uniform Fire Code**—Require the Uniform Fire Code to be used as a guide for project-level fire prevention and suppression activities, including site access, water supply, fire protection systems, and the use of fire-resistant building materials.
- **Goal HS-5:** Protect Merced County residents, visitors, and property through providing for the safe use, storage, transport, and disposal of hazardous materials and wastes.

- **Policy HS-5.1: Compliance with Safety Standards**—Require that hazardous materials are used, stored, transported, and disposed of in a safe manner, in compliance with local, state, and federal safety standards.

Villages at Laguna San Luis Community Plan

The Villages of Laguna San Luis Community Plan (Community Plan) was adopted in September 2008, and provides a long-range growth and development plan for approximately 6,200 acres located west of I-5 along SR 152 and SR 33 in western Merced County (County 2008). The community plan includes policies and guidance for the establishment of a new community that can accommodate growth and market demands, all while ensuring adequate public services and facilities, and compatibility with the surrounding environment.

The Community Plan includes the following policies related to hazards and hazardous materials:

- **Land Use Policy 4.A.6:** Avoid incompatibility conflicts between the major PG&E substation and adjacent land uses.
- **Open Space Objective 1.D:** Major utility easements preserved as open space for trails, wildlife habitat, aesthetics and public safety.
- **Open Space Policy 1.D.1:** Utilize overhead electrical transmission line easements and underground pipeline easements as open space corridors, and ensure adequate setbacks for public safety.
- **Open Space Implementation Measure 1.D.1.a:** All electrical transmission line corridors and pipeline easements shall be designated as "Open Space" on the Villages SUDP Diagram, and electrical transmission line corridors shall include a minimum 200 foot setback from edge of easement consistent with the Open Space Plan Map (Exhibit 13 of the Community Plan).

Merced County Airport Land Use Compatibility Plan

The Merced County Airport Land Use Commission has the authority to review public agency decisions regarding new land uses near airports and determine whether actions are contrary to the best interests of the airport and adjacent areas. The Merced County Airport Land Use Compatibility Plan was prepared and adopted by the Airport Land Use Commission on June 21, 2012 (County 2012).

3.9.2 Environmental Impacts

This section describes the project's potential impacts related to hazards and hazardous materials. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

Methods for Analysis

The project's effects were compared to the thresholds of significance related to hazards and hazardous materials to determine whether project implementation would result in impacts on people or the environment.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the project would have a significant effect if it would result in any of the conditions listed below.

Would the project:

- Create a significant hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials?
- Create a significant hazard for the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?
- Be located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard for the public or the environment?
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 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?
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Impacts Not Evaluated in Detail

Airport-Related Safety Hazards and Noise. The nearest public use airport to the project area is Los Banos Municipal Airport, 5.3 miles to the northeast of the solar project site, and the nearest private airstrip is Eagle Field, 19 miles to the southwest of the solar project site. The project would result in ***no impact*** related to safety hazards or excessive noise as a result of being located within an airport land use plan or within two miles of a public airport or public use airport.

Impacts and Mitigation Measures

Impact HAZ-1: Create a significant hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials? (*No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.*)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the impacts of the transport, use and storage of hazardous materials that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.4-2 on page 5.4-15 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that development under the Community Plan would involve the storage, use, and transport of hazardous materials at the project site during construction activities. In addition, the Community Plan included proposed commercial uses; therefore, it is likely that some facilities (e.g., dry cleaners and gas stations) could use hazardous materials during operation.

However, the Community Plan EIR concluded that compliance with federal, state, and local hazardous materials regulations, which would be monitored by the state (e.g., Cal/OSHA, DTSC, CHP) and/or local jurisdictions (e.g., MCFD and MCDEH), would reduce impacts associated with the use, transport, and storage of hazardous materials to less than significant.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignation and Zoning

The solar project would require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

As described in Chapter 2, *Project Description*, the project's proposed amendment would redistribute the affordable (i.e., medium-density/high-density) housing that was planned under the Community Plan. The off-site residential redesignation area would not include any different types of construction or development-related activity than what was described in the Community Plan EIR. For this reason, the amounts and types of materials typically used during construction that could contain hazardous substances, such as paints, solvents, cements, glues, and fuels, would not increase beyond what was described in the Community Plan EIR. Exposure to hazards and hazardous materials because of improper handling or use, as well as transportation accidents, fires, explosions, or other emergencies during operations, would continue to require monitoring and adherence to state and/or local regulations. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

The solar project, including construction of the gen-tie line and decommissioning, would involve the routine transport, use, or disposal of hazardous materials, as defined by the Hazardous Materials Transportation Uniform Safety Act. Materials typically used during construction that could contain hazardous substances include paints, solvents, cements, glues, and fuels.

Most of the hazardous waste generated by the solar project would occur during the temporary construction period. This would consist of liquid waste, including cleaning fluids, dust palliative, herbicides, and solvents, and some solid hazardous waste, such as welding materials and dried paint. These materials would be transported to the site during construction. Any hazardous materials produced from construction would be collected and transported away from the project site. Similar findings regarding construction-related hazardous materials were discussed in the Community Plan EIR, since construction equipment and vehicles used for buildout of the Community Plan would be similar to those used for the solar project.

The lithium-ion batteries for the battery energy storage system (BESS) are considered hazardous materials that are flammable and explosive. The transport of lithium-ion batteries is regulated as a hazardous material under the U.S. Department of Transportation's (DOT) Hazardous Materials Regulations (HMR) (49 CFR, Parts 171–180). The HMR applies to any material DOT determines can pose an unreasonable risk to health, safety, and property when transported in commerce. Lithium-ion batteries must conform to all applicable HMR requirements when offered for transportation or transported by air, highway, rail, or water (DOT 2023).

During construction, safety data sheets for all applicable materials present at the site would be made readily available to on-site personnel. During construction of the facilities, nonhazardous construction debris would be generated and disposed of in local landfills. A Stormwater Pollution Prevention Plan (SWPPP) is also required, per the construction general permit, for any construction site beyond 1 acre of disturbance. Fuels and lubricants used for field equipment would be subject to BMPs for handling hazardous materials and measures contained in the required SWPPP to limit releases of hazardous materials and wastes. Further discussion of BMP and SWPPP compliance with the NPDES General Construction Permit requirements is provided in Section 3.10, *Hydrology and Water Quality*, under Mitigation Measure WQ-1, of this SEIR. Recyclable materials, including wood, shipping materials, and metals, would be separated, when possible, for recycling. Liquids and oils in transformers and other equipment would be used in accordance with applicable regulations. The disposal of oils, lubricants, and spent filters would be performed in accordance with all applicable regulations, including the requirements of licensed receiving facilities. Overall, the relatively limited use of hazardous materials during construction would be controlled through compliance with applicable regulations, and the construction general permit BMPs. Therefore, with implementation of Mitigation Measure WQ-1, impacts from construction of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Operation

Operations and maintenance activities would require limited use of hazardous materials. Any hazardous materials used would be stored on-site in designated areas. The solar facility is not expected to produce hazardous wastes. Oil would be used as an insulating fluid in the transformers proposed to be located at the solar project substation. All transformers would be equipped with spill containment areas and battery storage would be in accordance with OSHA requirements such as inclusion of ventilation, acid resistant materials, and spill response supplies. No chemical cleaners would be used to wash the solar modules.

During normal operation, the photovoltaic (PV) modules, batteries, and inverters would not be expected to generate hazardous waste. The modules meet rigorous performance testing standards demonstrating durability in a variety of environmental conditions. All PV modules would conform to the International Electrotechnical Commission (IEC) test standards IEC 61646 and IEC61730 PV as tested by a third party testing laboratory certified by the IEC. In addition, the PV modules also conform to Underwriters Laboratory (UL) 1703 a standard established by the independent product safety certification organization. In accordance with UL 1703, the PV modules undergo rigorous accelerated life testing under a variety of conditions to demonstrate safe construction and monitor performance.

The PV modules installed on the project site could potentially utilize CdTe thin film technology. CdTe is generally bound to a glass sheet by a vapor transport deposition during the manufacturing process, followed by sealing the CdTe layer with a laminate material and then encapsulating it in a second glass sheet. Studies indicate that unless the PV module is purposefully ground to a fine dust, use of CdTe in PV modules do not generate any emissions of CdTe (Fthenakis, 2004). The project includes operational and maintenance protocols that would be used to identify and remove damaged or defective PV modules during annual inspections.

CdTe releases are unlikely to occur from accidental breakage of or fires involving PV modules. CdTe is a highly stable semiconductor compound due to strong chemical bonding that translates to extremely low solubility in water, low vapor pressure, and a melting point greater than 1,000 °C.

Potential impacts to soil, air, and groundwater quality from broken CdTe PV modules are highly unlikely to pose a potential health risk as they are below both human health screening levels and background levels (Sinha et al., 2011).

Potential CdTe emissions from fire are unlikely to occur at the project site because of the lack of fuel to support a sustained wildfire. Grass fires are the most likely fire exposure scenario for ground-mounted PV systems, and these fires tend to be short-lived due to the thinness of grass fuels. As a result, these fires are unlikely to expose PV modules to prolonged fire conditions or to temperatures high enough to volatilize CdTe, which has a melting point of 1,041 °C. Moreover, even if a desert wildfire could reach that temperature, the actual CdTe emissions from a PV module would be insignificant (~0.04percent) due to encapsulation in the molten glass matrix (Fthenakis et al., 2004).

Potential CdTe emissions from broken PV modules exposed to precipitation are also unlikely. Based on warranty return data, the breakage rate of CdTe PV modules is low, one percent over 25 years, which translates to an average of 0.04 percent per year. This breakage rate is an overestimate because over one third of PV module breakage occurs during shipping and installation. Modules that break during shipping and installation are removed from the construction site and returned to a manufacturing facility for recycling. Even if the CdTe semiconductor layer becomes exposed to the environment, it strongly resists being released from the PV module into the environment, and CdTe has an extremely low solubility in water.

CdTe PV modules would not pose a threat to nearby residences. The use of CdTe PV modules at the solar project site would not result in human or aquatic exposure of cadmium. A research article, "Fate and Transport Evaluation of Potential Leaching Risks from Cadmium Telluride Photovoltaics" (Sinha et al, 2011), further substantiates that during operation, CdTe PV modules do not pose a threat to human health or the environment due to its construction. The study evaluates the worst-case scenario to estimate potential exposures to CdTe compounds in soil, air or groundwater. The results show that exposure point concentrations in soil, air, and groundwater are one to six orders of magnitude below human health screening levels and below background levels, indicating that it is highly unlikely that exposures would pose potential health risks to onsite workers or offsite residents.

Other operational activities that pose potential hazards for the public and first responders stem from the storage and use of lithium-ion batteries within the solar project's BESS facility. The lithium-ion batteries are considered hazardous materials because they can overheat and ignite under certain conditions (e.g., a short circuit, physical damage, improper design or assembly). They are flammable and explosive, which can result in thermal runaway. This thermal runaway can propagate to other batteries or nearby combustible materials, potentially resulting in large-scale thermal events with severe consequences (DOT 2023). To minimize and address concerns, Senate Bill (SB) 38 requires the California Public Utilities Commission to implement emergency response and emergency action plans for BESS facilities. The owner/operator of a facility must coordinate with local emergency management agencies, unified program agencies, and local first responders to develop a response and action plan and submit the plan to the county and, if applicable, the city where the facility is located (Bradley 2023). Some emergency response plan requirements for minimizing risks for fire personnel and emergency responders involve establishing response procedures for an equipment malfunction or failure; establishing procedures that provide for the safety of surrounding residents, neighboring properties, and the environment (procedures to be established in consultation with local emergency management agencies); and establishing notification procedures for communication between the BESS facility and local emergency management agencies. Mitigation Measures WF-3a and WF-3b would further reduce

hazards for first responders in the event of a fire involving the BESS facility. Further discussion of the BESS fire suppression system is provided in Section 3.20, *Wildfire*, of this SEIR, under Impact WF-3. Therefore, with implementation of project-specific Mitigation Measures WF-3a and WF-3b, impacts from operation of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Decommissioning

As described in Chapter 2, *Project Description*, decommissioning of the project would occur immediately after 35 years. A Decommissioning and Reclamation Plan would implement removal of all Project components, including racking/mounting systems, panels, inverters, structural foundations, and other associated materials (Appendix 2-1). During decommissioning, the photovoltaic panels would be repurposed off-site, recycled, or disposed of in a landfill permitted to receive hazardous waste. Most materials would be recycled including steel, glass, concrete, and wood. Scrap equipment or metals that do not contain free-flowing oil may be sent for salvage. The photovoltaic panels may contain hazardous materials, such as aluminum, crystalline silicon, cadmium, selenium, and lead. Refer to Section 3.19, *Utilities and Service Systems*, for a discussion of solid waste disposal and landfill capacity.

If CdTe PV modules are used, the PV module manufacturer would likely provide CdTe module collection and recycling services. In any case, current CdTe PV modules pass federal leaching criteria for non-hazardous waste, due in part to the low solubility of CdTe, which means they would not pose a significant risk for cadmium leaching if they reached a landfill. As noted above, several peer-reviewed studies have evaluated the environmental, health, and safety aspects of CdTe PV modules. CdTe releases are unlikely to occur during accidental breakage or fire due to the high chemical and thermal stability of CdTe. Disposal risks of end-of-life CdTe PV modules are minimized because of the low solubility of CdTe and because the modules can be effectively recycled at the end of their approximately 30-year life. Studies indicate that unless the PV module is purposefully ground to a fine dust, use of CdTe in PV modules do not generate any emissions of CdTe (Fthenakis 2004). These studies have consistently concluded that use of CdTe PV modules do not present an environmental risk.

Decommissioning of the BESS facility would require proper disposal of the lithium-ion batteries. End-of-life options for lithium-ion batteries fall into three general categories: recycling, repurposing, and disposal (CPUC 2023). Equipment would be de-energized prior to removal, salvaged (where possible), placed in appropriate shipping containers, and secured on a truck for off-site salvaging, recycling, and/or disposal consistent with applicable requirements. All equipment would be handled and disposed of in compliance with applicable federal, state, and County regulations.

The types/quantities of hazardous materials used during decommissioning would be similar to the types/quantities used during construction; the hazard control measures would also be similar. The transport and use of hazardous materials is strictly regulated by state and federal agencies to minimize adverse impacts from accidental release. Therefore, decommissioning of the project would not create a significant hazard for the public or the environment; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Hazardous materials impacts related to the portion of the solar project site that is outside of the Community Plan boundary are included in the analysis above.

Off-Site Mitigation Site

The project would establish an off-site mitigation site of approximately 1,498 acres of grassland habitat. The habitat area would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. It would continue to be grazed or mowed and remain permeable for kit fox movement. Rodenticide usage would be prohibited. New fencing would be installed where necessary to appropriately manage livestock and prevent unauthorized access to the protected lands. Targeted invasive plant management activities would be necessary to prevent invasion by pest plant species. Because construction would not occur, the materials typically used during construction that could contain hazardous substances, such as paints, solvents, cements, glues, and fuels, would not be found on-site. In addition, operational activities (i.e., mowing, invasive plant management) would not result in exposure to hazards and hazardous materials from improper handling or use, and transportation accidents, fires, explosions, or other emergencies would not result. Therefore, impacts from off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Similar to the solar project, PG&E substation improvements would not involve the routine transport, use, or disposal of hazardous materials. Fuels and lubricants used on field equipment would be subject to the BMPs for handling hazardous materials in the required Stormwater Pollution Prevention Plan for the PG&E substation improvements. Operation of the PG&E substation improvements would not require the use of hazardous materials. However, in the event that hazardous materials are transported, used or stored on the substation site whether during the construction or operations phase, the following PG&E Avoidance and Minimization Measures (AMM)/Best Management Practices (BMPs) would be implemented to reduce potential impacts. The following applicable AMM/BMPs are described in Chapter 2, *Project Description*:

- PG&E AMM/BMP-4: Hazardous Materials Business Plan defining protocols for handling hazardous material/waste placed on-site.
- PG&E AMM/BMP-5: Hazardous Materials Storage. The storage of hazardous materials will be managed according to regulations and best management practices.
- PG&E AMM/BMP-6: Local Environmental Field Specialist (EFS) Notification. PG&E personnel will contact the EFS and stop work if any unanticipated or potentially contaminated substances are discovered.
- PG&E AMM/BMP-7: Sulfur Hexafluoride (SF₆) Gas Material/Waste Management. PG&E personnel will implement protocols for cleanup, transportation and disposal of any equipment that may contain SF₆ gas byproduct waste.

- PG&E AMM/BMP-8: Prepare and Implement a Spill Prevention, Control, and Countermeasure (SPCC) Plan for managing SPCC triggering events (e.g., new oil storage or modification of oil storage that exceeds defined threshold).
- PG&E AMM/BMP-9: Underground Electric Cable Handling and Disposal. PG&E will follow protocols for identifying and handling disposal of cable equipment found to be contaminated with hazardous material (e.g., asbestos insulation).
- PG&E AMM/BMP-10: Prepare and Implement Stormwater Pollution Prevention Plan (SWPPP). PG&E will prepare and implement a SWPPP to address handling wet and dry spoils during construction and maintenance of the substation.

Therefore, with implementation of the PG&E AMM/BMPs, the impacts from PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

No project component would create a significant hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials. Buildout of the solar project and PG&E improvements would not overlap with buildout of the residential redesignation area, and BMPs and project-specific mitigation measures would be implemented to reduce impacts during construction and operation. Impacts associated with the off-site mitigation site would be negligible. Therefore, with implementation of Mitigation Measures WQ-1, WF-3a, and WF-3b, the combined impacts of the entire proposed project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site components, would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Impact HAZ-2: Create a significant hazard for the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the impacts of the release of hazardous materials into the environment that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.4-1 on page 5.4-13 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that although no RECs were identified in the Phase I ESAs prepared for the Community Plan area, the entire area was not evaluated using the ESA process. Past agricultural and farming operations in the area could have resulted in contamination of soil and/or groundwater in some locations. Demolition, excavation, and construction activities in the area could also result in the exposure of hazardous materials, including asbestos, petroleum hydrocarbons, pesticides, herbicides, and fertilizers; contaminated debris; elevated levels of chemicals that could be hazardous; or hazardous substances that could be inadvertently spilled or otherwise spread into the environment and affect construction workers. In addition, if contaminated sites in the area are not

remediated before occupation or use of the site, then residents and others could be exposed to hazardous materials. These potentially significant impacts were reduced to less than significant with implementation of Community Plan EIR Mitigation Measure 5.4-1 on page 5.4-14 of the Community Plan EIR which requires approvals and consultation with several state and local agencies prior to earthmoving activities to determine the potential presence of hazardous materials on the site, in the soil, or in the groundwater of these unevaluated areas. In addition, the mitigation measure requires removal of any known or previously undiscovered USTs and contaminated soil from the site in accordance with County standards and would reduce the potential hazards associated with known or unknown USTs and contaminated soil.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignation and Zoning

As described in Chapter 2, *Project Description*, the project's proposed amendment would redistribute the affordable (i.e., medium-density/high-density) housing that was planned under the community plan. The off-site residential redesignation area would not include construction or development-related activities different from those described in the Community Plan EIR. For that reason, potential exposure to unknown hazards associated with the previous agricultural use, in addition to the hazardous materials used during the typical construction activities mentioned above, would not increase beyond that analyzed in the Community Plan EIR; implementation of Community Plan EIR Mitigation Measure 5.4-1 would reduce potentially significant impacts from the off-site residential redesignation to less than significant, consistent with the Community Plan EIR conclusion. Therefore, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

Potential impacts from construction of the solar facility include impacts from the accidental release of hazardous materials such as cleaning fluids and petroleum products, including lubricants, fuels, and solvents. Implementation of the BMPs (e.g., stabilization measures, traps, filters) required by the National Pollutant Discharge Elimination System (NPDES) Construction General Permit, as well as implementation of a project-specific HMBP, as required by state laws and regulations and local requirements, would reduce impacts from these materials to less than significant levels.

As discussed under *Existing Conditions*, no RECs were identified on the solar project site. However, a nearby REC was identified due to potential groundwater contamination from operation of the Billy Wright Landfill. The REC, shown in Figure A-1 in the Phase I ESA (Appendix 3.9-1) is located south of Billy Wright Road and west of I-5, and does not overlap with the project site or the off-site residential redesignation area. As discussed in Section 3.10, *Hydrology and Water Quality*, there are no dewatering actions proposed for construction on-site, and potential withdrawals from the Mid-Cal Well for construction (discussed under Impact WQ-2) are not anticipated to impact migration of the groundwater contamination at the Billy Wright Landfill due to the distance between the well and the landfill. Therefore, construction would not result in the accidental release of contaminated groundwater. See also Impact HAZ-4, below.

Construction would also involve the installation of solar PV panels and batteries at the project site. The hazardous materials contained in PV panels are in a solid and nonleachable state and would not be emitted as a result of breakage. Lithium-ion batteries contain hazardous materials that can cause both chemical (e.g., corrosive or flammable electrolytes) and electrical hazards. See Impact HAZ_1,

above, regarding potential impacts associated with CdTe PV panels and the lithium-ion batteries at the BESS facility; such panels and batteries would be handled, transported, and disposed of in compliance with applicable federal, state, and County regulations. Community Plan Mitigation Measure 5.4-1 is required for Implementation Plans and therefore does not apply to the solar project. Notwithstanding, the solar project's ESA effectively implements Community Plan Mitigation Measure 5.4-1. Therefore, impacts from construction of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

Operations and maintenance associated with the gen-tie line, PV modules, and inverters would produce no hazardous waste; therefore, none could be spilled or accidentally released. As noted above, hazardous materials contained in PV panels are in a solid and nonleachable state and would not be emitted as a result of breakage. The hazardous materials in the BESS facility would be contained in accordance with specifications that follow applicable federal, state, and local requirements. OSHA requirements call for the inclusion of appropriate ventilation, acid-resistant materials, and spill protection supplies.

As discussed under *Existing Conditions*, no RECs were identified on the solar project site. However, a nearby REC was identified due to potential groundwater contamination from operation of the Billy Wright Landfill. The REC, shown in Figure A-1 in the Phase I ESA (Appendix 3.9-1) is located south of Billy Wright Road and west of I-5, and does not overlap with the project site or the off-site residential redesignation area. As discussed in Section 3.10, *Hydrology and Water Quality*, there are no dewatering actions proposed for operation on-site, and potential withdrawals from the Mid-Cal Well for operation (discussed under Impact WQ-2) are not anticipated to impact migration of the groundwater contamination at the Billy Wright Landfill due to the distance between the well and the landfill. Therefore, operation would not result in the accidental release of contaminated groundwater. See also Impact HAZ-4, below.

Operation of the solar project would not involve the routine transport, use, or disposal of hazardous materials, as defined by the Hazardous Materials Transportation Uniform Safety Act. Noxious weeds on the solar project site would be controlled through the use of herbicides, moving, and/or grazing. Pesticide use would not be allowed. Adherence to state laws and regulations, as well as local protocols, during the use, storage, or transport of hazardous materials would minimize or avoid the potential for significant impacts related to upset and accident conditions. This would include preparation and implementation of a project-specific HMBP for any hazardous materials exceeding the minimum thresholds established by the state under Health and Safety Code Section 25500 et seq. Overall, adherence to regulations and standard protocols during the use, storage, or transport of hazardous materials would minimize or reduce potential impacts; impacts from operation of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Solar facility decommissioning would involve the use of fuel and lubricants for construction vehicles and equipment; it would also involve the transport, disposal, and recycling of hazardous materials used at the facility and in the BESS. Inadvertent releases of hazardous materials from spills or leaks

could occur. The Decommissioning and Reclamation Plan for the project, discussed in Impact HAZ-1 and included in Appendix 2-1, requires that containers used to store hazardous materials be inspected prior to removal for any signs of failure or leakage. Transportation of removed hazardous materials would be required to comply with applicable regulations, including those set by the U.S. Department of Transportation, and pursuant to the Project-specific Hazardous Materials Business Plan. The batteries at the energy storage facility would be recycled or disposed of in accordance with applicable regulations for the disposal of hazardous materials. Through compliance with existing hazardous material, universal waste, stormwater, and utility laws and regulations, including implementation of a project-specific HMBP for any hazardous materials exceeding the minimum thresholds established by the state, potential impacts for the public or the environment from a reasonably foreseeable upset or accident condition involving a release of hazardous materials would be reduced; impacts from decommissioning of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Hazardous materials impacts associated with the portion of the solar project site that is outside of the Community Plan boundary are included in the analysis above.

Off-Site Mitigation Site

The project would establish an off-site mitigation site of approximately 1,498 acres of grassland habitat. The habitat area would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. It would continue to be grazed or mowed and remain permeable for kit fox movement. Rodenticide usage would be prohibited. New fencing would be installed where necessary to appropriately manage livestock and prevent unauthorized access to the protected lands. Targeted invasive plant management activities would be necessary to prevent invasion by pest plant species. Given the limited extent of activities that would occur during establishment and management of the off-site mitigation site, no reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would occur. Therefore, impacts from off-site mitigation site components would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Construction of the PG&E substation improvements would require cleaning fluids and petroleum products, including lubricants, fuels, and solvents. Implementation of the BMPs required by the NPDES Construction General Permit would reduce potential construction impacts from these materials to less-than-significant levels. Construction and operation of the PG&E substation improvements would comply with existing federal, state, and County laws and regulations pertaining to the use, storage, or transport of hazardous and nonhazardous materials. Hazardous wastes are not expected to be produced during the operation of the PG&E substation improvements. However, in the event that a reasonably foreseeable upset and accident conditions involving the

release of hazardous materials into the environment on the substation site whether during the construction or operations phase, the following PG&E Avoidance and Minimization Measures (AMM)/Best Management Practices (BMPs) would be implemented to reduce potential impacts. The following applicable AMM/BMPs are described in Chapter 2, *Project Description*:

- PG&E AMM/BMP-4: Hazardous Materials Business Plan defining protocols for handling hazardous material/waste placed on-site.
- PG&E AMM/BMP-5: Hazardous Materials Storage. The storage of hazardous materials will be managed according to regulations and best management practices.
- PG&E AMM/BMP-6: Local Environmental Field Specialist (EFS) Notification. PG&E personnel will contact the EFS and stop work if any unanticipated or potentially contaminated substances are discovered.
- PG&E AMM/BMP-7: Sulfur Hexafluoride (SF6) Gas Material/Waste Management. PG&E personnel will implement protocols for cleanup, transportation and disposal of any equipment that may contain SF6 gas byproduct waste.
- PG&E AMM/BMP-8: Prepare and Implement a Spill Prevention, Control, and Countermeasure (SPCC) Plan for managing SPCC triggering events (e.g., new oil storage or modification of oil storage that exceeds defined threshold).
- PG&E AMM/BMP-9: Underground Electric Cable Handling and Disposal. PG&E will follow protocols for identifying and handling disposal of cable equipment found to be contaminated with hazardous material (e.g., asbestos insulation).
- PG&E AMM/BMP-10: Prepare and Implement Stormwater Pollution Prevention Plan (SWPPP). PG&E will prepare and implement a SWPPP to address handling wet and dry spoils during construction and maintenance of the substation.

Therefore, with implementation of the PG&E AMM/BMPs, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

The impact of the total project would be less than significant because impacts associated with the off-site residential redesignation component would be reduced to less than significant by Community Plan EIR Mitigation Measure 5.4-1. Other components of the project would result in no new impacts (and would not be subject to Community Plan EIR Mitigation Measure 5.4-1). Based on the analysis above, the combined impacts of the entire proposed project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site components, would be less than significant with implementation of Community Plan EIR mitigation, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact HAZ-3: Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan planned for the development of eight elementary schools, three middle schools, and one high school within the Community Plan area. As summarized in Impact HAZ-1, Impact HAZ-2, and Impact HAZ-4, the Community Plan EIR evaluated the impacts of introducing various types of hazards within the Community Plan area, which would inherently be within 0.25 miles of the schools proposed as part of the Community Plan. Refer to Impact HAZ-1, Impact HAZ-2, and Impact HAZ-4 for summaries of those impacts. The Community Plan EIR included Mitigation Measure 5.4-3 requiring that buildout of any Community Plan phase including a school facility must designate school sites based on a pipeline risk assessment and California Department of Education (CDE) school siting criteria, which requires a minimum setback of 1,500 feet of the easement of an aboveground or underground pipeline that can pose a safety hazard. The Community Plan EIR also included Mitigation Measure 5.4-4 requiring school sites to be located within adequate distances from transmission line easements to meet CDE setback criteria. These requirements are reinforced through policies in the Community Plan, including Land Use Concept, Policy 4.C.1 and Community Design Concept Policy 1.J.1, Policy 1.J.2, Policy 1.J.3. The analysis in Section 5.4, *Public Health and Hazards* (pages 5.4-1 – 5.4-21), which is incorporated by reference, determined that impacts would be less than significant with mitigation.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignation and Zoning

As described in Chapter 2, *Project Description*, the project's proposed amendment would redistribute the medium-density/high-density housing that was planned under the Community Plan. The off-site residential redesignation area would not include different types of construction or development-related activity than what was described in the Community Plan EIR. For this reason, the potential exposure of schools to hazards would not increase beyond that analyzed in the Community Plan EIR; implementation of Community Plan EIR Mitigation Measures 5.4-3 and 5.4-4 would reduce potentially significant impacts to less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

No existing schools are located within 0.25 mile of the solar project site. While several schools are planned as part of Community Plan buildout, none have been proposed or entitled. Thus, it is unlikely that any schools would be located within 0.25 mile of solar project construction, which is expected to be completed in 2025. Therefore, impacts from construction of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

No existing schools are located within 0.25 mile of the solar project site. The Community Plan includes several potential school sites as part of buildout of the Community Plan, including schools on and near the solar project site. Schools on the solar project site would not be built during the life of the solar project. Though none of the Community Plan EIR schools have been entitled or are proposed at this time, it is possible the solar project could, at some point in its lifetime, operate within 0.25 miles of a future school proposed near the solar project site. Future schools located near BESS facilities could result in significant fire hazard impacts for schools. However, as discussed in Impact HAZ-1, implementation of project-specific Mitigation Measures WF-3a and WF-3b, as well as compliance with existing federal, state, and County laws and regulations, would reduce fire risk impacts at the BESS facility, including potential impacts on future schools. In addition, future schools developed as part of the Community Plan would be subject to Land Use Concept, Policy 4.C.1 and Community Design Concept Policy 1.J.1, Policy 1.J.2, Policy 1.J.3, as well as Community Plan EIR Mitigation Measures 5.4-3 and 5.4-4, to address potential health and safety impacts from pipelines and electrical transmission lines. Further, as discussed in Impact HAZ-1, Impact HAZ-2, and Impacts HAZ-4, the solar project would not result in significant impacts related to the handling or emission of hazardous materials. Four underground utility easements cross the eastern portion of the solar project site and one transmission line easement crosses the southwestern portion of the site. A San Luis Water District (SLWD) water line and corresponding 70-foot-wide easement also crosses through the western portion of the solar project site. Therefore, the solar project would be required to prepare a preliminary site assessment and pipeline risk analysis pursuant to Community Plan Mitigation Measure 5.4-3. Community Plan Mitigation Measure 5.4-4 applies to Implementation Plans, and as such does not apply to the solar project. Therefore, with implementation of Community Plan EIR mitigation and project-specific Mitigation Measures WF-3a and WF-3b, impacts from operation of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Decommissioning

Impacts associated with solar project decommissioning would be the same as those associated with solar project operation, discussed above.

Additional Proposed Development Outside of the Community Plan

Solar Project

Impacts associated with portions of the solar project outside the Community Plan area would be the same as those associated with portions of the solar project inside the Community Plan area, discussed above.

Off-Site Mitigation Site

No existing or proposed schools are located within 0.25 mile of the off-site mitigation site. Therefore, no impact from the off-site mitigation site would occur, and the less-than-significant impact identified in the Community Plan EIR would not be exceeded. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

For reasons stated above and in Impact HAZ-1, Impact HAZ-2, and Impacts HAZ-4, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

With implementation of Community Plan Mitigation Measure 5.4-3 and project-specific Mitigation Measures WF-3a and WF-3b, the combined impact of the total project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site components, would be less than significant, consistent with the Community Plan EIR conclusion.

With implementation of Community Plan EIR mitigation and project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.

Impact HAZ-4: Be located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard for the public or the environment? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the impacts of the release of hazardous materials into the environment that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.4-1 on page 5.4-13 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that although no RECs were identified at the time within the residential redesignation area, the entire area was not evaluated using the ESA process. Past agricultural and farming operations in the area could have resulted in contamination of soil and/or groundwater in some locations.

The Community Plan Phase I ESA indicated that no persistent pesticides have been stored on-site or applied to crops grown on-site. The following were found adjacent to the off-site residential redesignation area: surface staining adjacent to a 10,000-gallon diesel AST, one 500-gallon gasoline AST, one empty 500-gallon AST, two 250-gallon motor oil ASTs, and two 55-gallon drums of motor oil. The State Water Board web site identified two USTs in the Community Plan area at the intersection of SR 33 and Gonzaga Road:

- The Forebay Unocal at 28960 Gonzaga Road
- The San Luis Truck Plaza at 28991 Gonzaga Road

These USTs are anticipated to remain in operation with implementation of the Community Plan. Most agricultural operations require on-site fuel storage to operate heavy equipment (e.g., tractors, plows), and the likelihood that previously undiscovered USTs exist on the site is very high. It is possible that old, abandoned ASTs or USTs may present a hazard to construction workers or perhaps contain hazardous materials. Such a tank would need to either be closed on-site or removed in accordance with appropriate regulations, and these activities could present health and safety risks to construction workers. Risks could include exposure to the tank's contents or vapors. The Community Plan EIR found that these potentially significant impacts were reduced to less than

significant with implementation of Community Plan Mitigation Measure 5.4-1 on page 5.4-14 of the Community Plan EIR which requires approvals and consultation with several state and local agencies prior to earthmoving activities to determine the potential presence of hazardous materials on the site, in the soil, or in the groundwater of these unevaluated areas. In addition, the mitigation measure requires removal of any known or previously undiscovered USTs and contaminated soil from the site in accordance with County standards and would reduce the potential hazards associated with known or unknown USTs and contaminated soil.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignation and Zoning

As described in Chapter 2, *Project Description*, the project's proposed amendment would redistribute the medium-density/high-density housing that was planned under the Community Plan. The off-site residential redesignation area was not listed on the databases searched for this report, including those compiled pursuant to Government Code Section 65962.5. Regardless, the off-site residential redesignation area would not include different types of construction or development-related activity than what was described in the Community Plan EIR. The REC identified in the Phase I ESA associated with potential groundwater contamination from operation of the Billy Wright Landfill (discussed below) does not overlap with the off-site residential redesignation area. For that reason, the potential exposure to unknown hazards associated with the USTs, LUSTs, or contaminated soil sites mentioned above would not increase beyond that analyzed in the Community Plan EIR; implementation of Community Plan EIR Mitigation Measure 5.4-1 would reduce potentially significant impacts to less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction, Operation, Decommission

The project-specific Phase I ESA concluded that there are no significant risks related to hazards for the public. Results from the Phase I ESA database search did not indicate a significant risk of environmental contamination at the project site, nor is there any need for environmental cleanup of existing conditions. The solar project site was not listed on the databases searched for this report, including those compiled pursuant to Government Code Section 65962.5. However, an area adjacent to the southeastern portion of the solar project site and off-site residential redesignation area is classified as a REC. The REC is associated with groundwater contamination from the Billy Wright Landfill. In accordance with Title 27, California Code of Regulations, the landfill is classified as a Class III landfill and regulated by the Merced County Regional Waste Management Authority. A Class III landfill receives primarily municipal solid waste and nonhazardous solid waste and is required to maintain groundwater monitoring systems to determine if contamination is being released. The most recent Billy Wright Landfill Monitoring Summary Report indicated that contaminated groundwater is not migrating onto the southern portion of the solar project site. However, on the eastern boundary of the landfill (approximately 200 yards south of the solar project site), low-level concentrations of dichlorodifluoromethane, TCE, and PCE were detected in the groundwater monitoring well. As of 2019, when the Phase I ESA was conducted, there was insufficient data for determining whether contaminants were migrating from the landfill to the groundwater beneath the southeastern portion of the solar project site. Given this uncertainty, and the fact that dichlorodifluoromethane, TCE, and PCE are highly toxic compounds, the monitoring well location and a buffer zone surrounding it was identified as a REC in the Phase I ESA. The REC and buffer zone

are located south of Billy Wright Road, and do not overlap with the solar project site. Furthermore, neither construction nor operation of the solar project would involve on-site groundwater extraction. Community Plan Mitigation Measure 5.4-1 is required for Implementation Plans and therefore does not apply to the solar project. Impacts from construction, operation, and decommissioning of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. Notwithstanding, the solar project's ESA effectively implements Community Plan Mitigation Measure 5.4-1, and no additional mitigation is required for the solar project. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Impacts related to hazardous materials sites on the portion of the solar project site that is outside of the Community Plan boundary are included in the analysis above.

Off-Site Mitigation Site

The off-site mitigation site is immediately south of Los Banos Reservoir. There are no existing residences or communities within the off-site mitigation site or near the site. The off-site mitigation site was not listed on the databases searched for this analysis pursuant to Section 65962.5 of the California Government Code and no known USTs, LUSTs or RECs have been identified on this site (DTSC 2023). The nearest reported LUST site is approximately a mile east of the off-site mitigation area and involved petroleum contamination of groundwater. The site was cleaned up as of 2009 and the site is no longer considered a LUST. Therefore, impacts of the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The PG&E substation site was not listed on the databases searched for this analysis pursuant to Section 65962.5 of the California Government Code. As discussed in the Phase I ESA, there are no known RECs within the PG&E substation area (EnviroStor 2023). An EnviroStor database search indicates the two potential RECs located less than a mile north of the substation.

- Forebay Chevron: LUST Clean-up site
- Romero Ranch: Voluntary Clean-up site

The Forebay Chevron station is a gas station located at 28960 Gonzaga Road in Santa Nella that has an open case with the DTSC regarding potential fuel and fuel related chemical contamination into the groundwater. As of May 2022, the site has not been cleaned up and an assessment and interim remedial action has been taken. The Romero Ranch site is a 30,000-acre cattle ranch located three miles west of the I-5 and Highway 33 in Santa Nella. This voluntary cleanup site involved pesticide contamination in an acre of soil due to a leak in a concrete dip tank used to treat cattle for parasites. The site was cleaned up and the case was closed as of December 1998.

Since the PG&E improvements would not involve groundwater extraction and the RECs sites are not within the vicinity of the substation area. Impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

The combined impact of the total project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site components, would be less than significant, consistent with the Community Plan EIR conclusion, because no part of the project would be located on a site that is on a list of hazardous materials sites compiled pursuant to Government Code Section 6596215. Impacts associated with the off-site residential redesignation component would be further reduced by Community Plan EIR Mitigation Measure 5.4-1, and the other components of the project would result in no new impacts. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact HAZ-5: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

This impact is evaluated in Section 3.20, *Wildfire*. See Impact WF-1. As discussed, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact HAZ-6: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

This impact is evaluated in Section 3.20, *Wildfire*. See Impact WF-2. As discussed, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

3.9.3 References Cited

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Hydrology and Water Quality

This section identifies and evaluates the project's potential impacts on hydrology and water quality, including surface water, groundwater, drainages, and flood hazards. This section also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site General Plan amendment are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Relevant technical documentation used in this analysis includes:

- *Hydrology and Drainage Report for the Las Camas Solar Project, Merced County, California* (Appendix 3.10-1)
- *Evaluation of Potential Effects of Construction and Operational Water Demand on Regional Groundwater Supply, Technical Memorandum, EMKO Environmental, Inc., February 2023.* (Appendix 3.10-2)

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. No questions or concerns related to Hydrology and Water Quality were raised in the responses to the NOP (Appendix 1-2).

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.10.1 Existing Conditions

Environmental Setting

Regional Setting

The project site is located approximately 3 miles southeast of the community of Santa Nella, 6 miles west of Los Banos, and 30 miles southwest of Merced. The surrounding area is predominantly undeveloped pervious land. A landfill is located immediately south of the project site, fronting Billy Wright Road. A small community to the northwest includes approximately 41 acres of impervious surfaces with mostly residential and commercial uses.

Surface Water

The meteorological setting is typical of a Mediterranean climate. Average high temperatures reach 95 degrees Fahrenheit (°F); average lows can reach 38°F (U.S. Climate Data 2019). Average precipitation is approximately 10 inches annually in years not affected by drought conditions and most of the rainfall occurs between November and March (Appendix 3.10-1).

The project site is inside the Lower Los Banos Creek sub-watershed of the Middle San Joaquin-Lower Chowchilla Unit, which is in the San Joaquin Hydrologic Region. The total drainage area for the sub-watershed is approximately 229 square miles.

Water quality at the project site is primarily regulated by the Central Valley Regional Water Board and the Water Quality Control Plan (Basin Plan) for the Central Valley Region (Central Valley Regional Water Quality Control Board 2011). This Basin Plan lists water quality objectives for the following categories: bacteria, biostimulatory substances, chemical constituents, Cryptosporidium and Giardia, color, dissolved oxygen, floating material, mercury, methylmercury, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, taste and odors, temperature, toxicity, and turbidity. These categories contain limits or levels of water quality constituents or characteristics established for the protection of beneficial uses of water or the prevention of nuisance within a specific area.

The San Luis Reservoir, the largest off-stream reservoir in the United States, is approximately 5 miles west of the project site. The reservoir stores more than 2 million acre-feet (af) of water from the Sacramento-San Joaquin Delta and aqueducts from Northern California (U.S. Bureau of Reclamation and Santa Clara Valley Water District 2019). O'Neill Forebay lies in front of the reservoir and stores water temporarily before distribution. The California Aqueduct is located east of Interstate (I) 5, less than 0.5 mile east of the project site.

Groundwater

The project site partially overlies the Delta-Mendota Subbasin (Subbasin) (California Department of Water Resources 2018). The Subbasin is in the northwest portion of the San Joaquin Valley Groundwater Basin, which is within the southern Central Valley. The Subbasin covers approximately 764,965 acres and contains a mix of Quaternary alluvial non-marine deposits. The remainder of the project site does not overlie a designated groundwater basin.

The Delta-Mendota Subbasin is considered a high-priority subbasin. The California Department of Water Resources has classified the Delta-Mendota Subbasin as critically overdrafted because of subsidence issues. Groundwater levels in some portions of the northern and central Delta-Mendota regions have been declining for many years; however, groundwater levels in other areas of the Subbasin have remained stable or increased in recent years. Groundwater overdraft around the city of Los Banos has been offset primarily by recharge from the San Joaquin River Exchange Contractors (SJREC) service area through implementation of projects and management actions (SJREC 2019).

Although the total volume of groundwater in storage in the Subbasin has declined over time, historically, groundwater storage reductions have not been an area of concern within the northern and central Delta-Mendota region of the Subbasin, particularly in the Lower Aquifer, below the Corcoran Clay layer, because large volumes of fresh water are in storage (Appendix 3.10-2). Inelastic land subsidence is an issue in some, but not all, parts of the Subbasin.

Groundwater quality in the northern and central Delta-Mendota region of the Subbasin, which is where the project site is located, varies by location (Appendix 3.10-1). Concerns related to groundwater quality are largely related to nonpoint sources and/or naturally occurring constituents. Seawater intrusion is not applicable to the Subbasin because the Subbasin is located inland from the Pacific Ocean. Primary constituents of concern throughout the northern and central Delta-Mendota region of the Subbasin are total dissolved solids (TDS), nitrate as nitrogen, and boron, all of which have anthropogenic as well as natural sources.

The 24 Groundwater Sustainability Agencies (GSAs) in the Subbasin operate under the Sustainable Groundwater Management Act of 2014 (SGMA). The project site is adjacent to the jurisdiction of the northern and central Delta-Mendota region. The eight GSAs in the region collaborated to develop one of the six Groundwater Sustainability Plans (GSPs) for the Subbasin (Woodard & Curran and Provost & Pritchard Consulting Group 2019). The goal of the GSP is to achieve sustainable groundwater management by identifying and implementing measures that will ensure a sustainable yield (i.e., the management of groundwater so as to avoid undesirable results [by 2040]). Undesirable results, as defined by the SGMA, include a chronic lowering of groundwater levels, reductions in groundwater storage, seawater intrusions, degraded water quality, land subsidence, and depletions in interconnected surface waters. On March 2, 2023, the Department of Water Resources issued a determination that the Delta-Mendota GSP is inadequate, shifting responsibility for the GSP to the State Water Resources Control Board. This decision permits, but does not require, the State Water Resources Control Board (State Water Board) to intervene, such as by designating the basin as probationary after at least 90 days' notice and a public hearing; such a designation would subject many groundwater extractors to certain fees and reporting requirements. If the GSA fails to remedy deficiencies within one year following a probationary designation, the State Board could then choose to develop an interim GSP until the GSA adopts an adequate plan of its own. In the meantime, the current GSP remains effective.

Groundwater evaluations conducted as part of the northern and central Delta-Mendota region GSP have provided estimates of historic, current, and future groundwater conditions. Incorporating potential effects of climate change and the results of Projects and Management Actions identified in the GSP, the Upper Aquifer water budget is projected to improve to -4,000 acre-feet per year (afy) on average over the period from 2014 to 2070.

According to groundwater measurements taken during a February 2018 preliminary site assessment prepared by AquaPath Environmental and Hydrological Consulting for the Forebay Chevron located at 28960 Gonzaga Road in Santa Nella, static groundwater readings were recorded at 33 and 49 feet below ground surface (bgs) (AquaPath 2018). The groundwater monitoring site is approximately 0.31 mile from the northwest portion of the project site (ICF 2021). Groundwater infiltration into the soil boring was described as extremely slow.

Local Setting

Solar Project Site

The solar project site is on approximately 1,741 acres of vacant, undeveloped land in an unincorporated part of the county at the southwest corner of the intersection of State Route (SR) 33/SR 152 and Interstate 5 (I-5). The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming.

Topography

The solar project site is at the southwest corner of the intersection of State Route (SR) 33/SR 152 and I-5 and can be accessed via Billy Wright Road from SR 33/SR 152. The topography of the solar project site is mostly flat or gently rolling, with an average slope of 4.9 percent. Steeper slopes are clustered near the southwest corner of the site and along a riverine feature in the southern portion of the site. Elevations on the site range from approximately 220 feet above sea level at the lowest point to 558 feet at the highest point.

Land Cover

The solar project site is undeveloped, consisting predominantly of non-native annual grassland. Portions of the solar project site are used for grazing and dry-land farming. The solar project site is almost entirely pervious, including its gravel roads. Three 230-kilovolt (kV) transmission lines and a 69 kV transmission line run north-south through the project site and intersect at the corner to the west. Four underground utility pipelines and corresponding easements cross the eastern portion of the solar project site. Otherwise, the solar project site has no distinguishing human-made features.

The surrounding area is predominantly undeveloped, pervious land with a landfill is located immediately south of the solar project site fronting Billy Wright Road. A small community to the northwest includes approximately 41 acres of impervious surfaces with mostly residential and commercial uses (Figure 3.10-1).

Soils

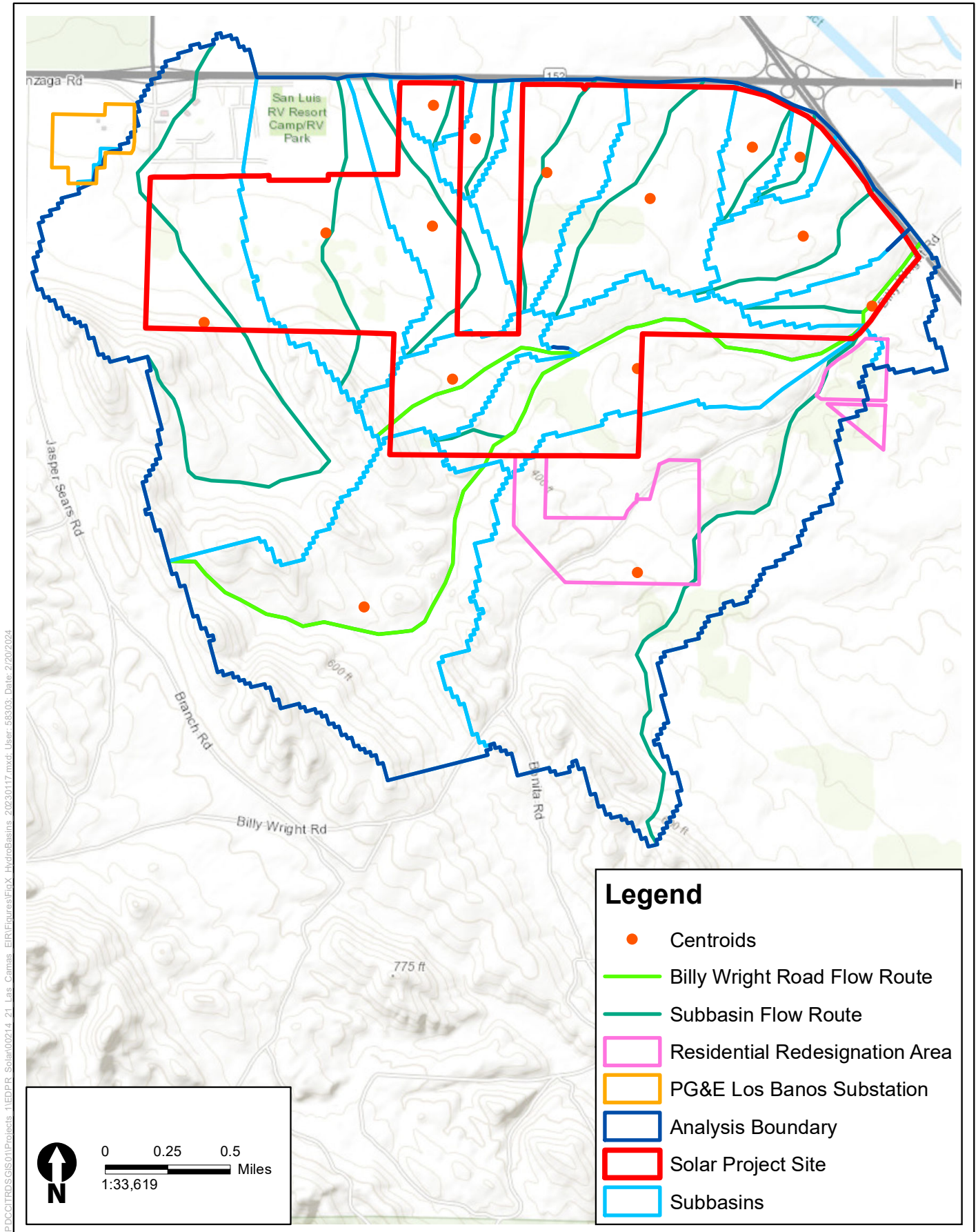
Native soils within the project area are predominately Apollo clay loam (82 percent) (Natural Resources Conservation Service 2020). Other soil types are Ayar clay (2 percent), Ballvar loam (3 percent), Damluis clay loam (3 percent), Los Banos clay loam (7 percent), Oneil silt loam (1 percent), and San Timoteo-Wisflat sandy loams complex (2 percent). The common characteristic of these soils is their low permeability. Apollo clay loam has a slow infiltration rate and slow rate of water transmission.

Subbasins

Fifteen subbasins drain to and through the project area, covering a total area of 4,739 acres (Appendix 3.10-1). These subbasins were delineated using StreamStats (U.S. Geological Survey 2021), with modifications based on a U.S. Geological Survey topography map (Esri 2013) and features such as roadways. Figure 3.10-1 shows the delineation for the subbasins. As shown, the subbasins also encompass the majority of the off-site residential redesignation area, discussed below.

Drainages

The delineated subbasins produce primarily a shallow concentrated flow. A minor ephemeral drainage ("riverine feature" described in Chapter 2, *Project Description*) exists adjacent to Billy Wright Road (outlet of Subbasin 13) on the solar project site. As discussed in Section 3.4, *Biological Resources*, this aquatic resource was determined to be a non-wetland water; it does not receive or contribute water flow to waters of the United States, but may be considered waters of the State (ICF 2022). Measurements taken from Google Earth imagery indicate that the drainage has a top width of approximately 20 feet, a depth of approximately 4 feet, and side slope of approximately 2:1 (horizontal:vertical) (Google Earth 2020).



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Figure 3.10-1
Subbasin Delineation and Analysis Area

The outlet of Subbasin 13 drains through a culvert under I-5 and terminates at the California Aqueduct levee. Within the solar project site and PG&E substation improvement area, a portion of the runoff infiltrates into the ground. None of the flow enters a storm drainage system.

Groundwater

The solar project site partially overlaps with the Delta-Mendota Subbasin. The remainder of the solar project site does not overlie a designated groundwater basin. According to the preliminary geotechnical report prepared for the solar project site (RRC 2020), static groundwater levels near the project site (California Department of Water Resources 2020) were reported to be approximately 16 feet bgs, with the shallowest groundwater level recorded at 9 feet bgs at a well 1 mile northeast of the project site. On-site soil borings were advanced to 20.5 feet bgs during the geotechnical investigation in 2020, and no groundwater was encountered (ICF 2021). No active wells are on the project site, and no groundwater monitoring has been or is being conducted (CalGEM 2019).

The Billy Wright Landfill is adjacent to the southeastern portion of the solar project site and has been operating as a Class III landfill receiving solid waste since 1973. The Billy Wright Landfill Monitoring Summary Report, which monitors groundwater data (Appendix 3.9-1), shows that dichlorodifluoromethane, trichloroethylene (TCE), and tetrachloroethylene (PCE) were detected in one of the monitoring wells approximately 200 yards south of the solar project site. Groundwater near this well flows primarily to the east (parallel to the solar project site) but, at a limited number of locations, also slightly to the northeast (toward the solar project site). Given that there are no monitoring wells downgradient of the well containing the contaminated groundwater, there is insufficient data for determining whether contaminants are migrating through the groundwater. Although unlikely, given this uncertainty, and the fact that dichlorodifluoromethane, TCE, and PCE are highly toxic compounds, an area potentially affected by the contamination has been designated as a recognized environmental condition (REC), according to the Phase I Environmental Site Assessment (ESA). The REC, shown in Figure A-1 in the Phase I ESA (Appendix 3.9-1) is located south of Billy Wright Road and west of I-5, and does not overlap with the project site or the off-site residential redesignation area.

Flood Hazards

The solar project site is located on Flood Insurance Rate Maps 06047C0800G and 06047C0825G, effective December 2, 2008. Specifically, the solar project site is located within Zone D, an undetermined area of flood hazard (Federal Emergency Management Agency [FEMA] 2008a and 2008b). There are no Special Flood Hazard Areas (SFHAs) or mapped regulatory floodways within or near the solar project site (i.e., not within the 100- or 500-year flood zone). A review of the Flood Insurance Study for Merced County, Community Number 060188, reveals no references to flood hazards within the solar project site vicinity. In addition, the solar project site is not located within the potential dam failure inundation areas for the San Luis Dam, O'Neill Forebay, Little Panoche Reservoir, Lake Yosemite, McClure Lake, and Los Banos Creek Detention Reservoir (County of Merced [County] 2012a).

PG&E Substation

Topography and Land Cover

Topography at the PG&E substation is generally flat at an elevation of approximately 310 feet above sea level. The PG&E substation is mostly paved, with a small perimeter of undeveloped, pervious land and ornamental landscape inside the fence line. The area where the fence line would be extended consists of undeveloped pervious land.

Soils

The primary soil units located within the PG&E substation are Ballyar loam and Damluis clay loam.

Subbasin

The eastern portion of the existing PG&E substation falls within Subbasin 15 (Figure 3.10-1).

Drainages

As discussed in Section 3.4, *Biological Resources*, one unvegetated streambed is present within the PG&E substation improvements area. The stream is a non-wetland drainage originating from runoff from the western portion of the existing PG&E substation. The western terminus was unvegetated and contained nothing but 6- to 12-inch rock riprap. This feature is most likely fed by runoff from the substation facility. This drainage was not included in the hydrology analysis because it is outside of Subbasin 15.

Section 3.4, *Biological Resources*, also notes that one vegetated streambed is present within the PG&E substation property, north of and adjacent to the improvement area. A leaky pipe at the northern end of the substation provides water to this feature. This drainage was not included in the hydrology analysis because it is outside the PG&E substation improvements area and does not convey channel flow to the drainages studied in this analysis.

Groundwater

The PG&E substation completely overlaps the Delta-Mendota Subbasin. No active wells are on the PG&E substation site, and no groundwater monitoring has been or is being conducted.

Flood Hazards

The flood hazard characteristics of the PG&E substation site are substantially similar to those at the solar project site, described above.

Off-Site Residential Redesignation Area

Topography

The off-site residential redesignation area is located south of Billy Wright Road, south and southeast of the solar project site. The topography of the off-site residential redesignation area is substantially similar to the topography described for the solar project site above.

Land Cover

The environmental setting at the off-site residential redesignation area is described in Chapter 3 of the Community Plan EIR, incorporated by reference, on page 3-1 (EDAW 2007). As described in that discussion, the off-site residential redesignation area is used primarily for active and fallowed

agricultural production (e.g., alfalfa, hay, oats, vineyards, orchards) and cattle and sheep grazing. Several gravel roads and parking lots provide existing impervious surfaces within the area. This discussion accurately describes the current setting at the residential redesignation area.

Soils

The primary soil units located within the off-site residential redesignation area are Los Banos clay loam and Arburua loam. Los Banos clay loam is described above for the solar project site. Arburua loam consists of well-drained soils on hillslopes. The soils formed from residuum weathered from sandstone and shale and have moderate permeability (Natural Resources Conservation Service 2020).

Subbasins

The off-site residential redesignation area primarily drains into Subbasins 11, 12, and 13 along Billy Wright Road. A small portion of the area drains into a separate subbasin outside of the analysis area.

Drainages

There is one small ephemeral drainage that briefly intersects with a portion of the off-site residential redesignation area (approximately 450 linear feet). Measurements taken from Google Earth imagery indicate that the drainage has a top width of approximately 30 feet, a depth of approximately 1 feet, and side slope of approximately 5:1 (horizontal:vertical) (Google Earth 2020).

Groundwater

The off-site residential redesignation area does not overlie a designated groundwater basin.

Flood Hazards

The same flood hazard setting discussed above for the solar project site applies to the off-site residential redesignation area.

Off-Site Mitigation Site

Topography and Land Cover

The off-site mitigation site is located approximately 5 miles south of the solar project site and borders the southern and eastern shorelines of the Los Banos Creek Detention Reservoir. It is composed of approximately 1,498 acres of grassland habitat that would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. Similar to the solar project site, elevations range from 100 feet above sea level at the lowest point to 500 feet at the highest point.

Soils

The primary soil units underlying the off-site mitigation site are substantially similar to those identified and described for the solar project site, above.

Subbasins

The off-site mitigation site overlaps with three watersheds: Upper Los Banos Creek, Lower Los Banos Creek, and Mud Slough. Approximately 20 square miles of the Mud Slough watershed drains through the southern portion of the site and the Lower Los Banos Creek watershed

contributes just 1.5 square miles. However, the Los Banos Creek Detention Reservoir truncates the Upper Los Banos Creek watershed (157 square miles), interrupting natural flow and sediment transport to the northern portion of the off-site mitigation site.

Drainages

There are several drainage features on the site, composed primarily of small gullies that drain into a wide riverine feature in the southern portion of the site. The outfall from the reservoir in the northern portion of the site flows into several anastomosing, vegetated channels. These channels drain into a culvert that is located under I-5 on the eastern boundary of the site.

Groundwater

The off-site mitigation site does not overlie a designated groundwater basin. There are no active groundwater wells in this area.

Flood Hazards

The off-site mitigation site is located on Flood Insurance Rate Map 06047C1025G, effective December 2, 2008. Specifically, the project site is located within Zone D, an undetermined area of flood hazard (FEMA 2008a and 2008b). There are no SFHAs or mapped regulatory floodways within or near the off-site mitigation site (i.e., not within the 100- or 500-year flood zone). The off-site mitigation site is partially located within the potential dam failure inundation areas for the Los Banos Creek Detention Reservoir (County 2012a).

Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) is the primary federal legislation governing water quality whose objective is “to restore and maintain the chemical, physical, and biological integrity of the nation’s waters,” which includes oceans, bays, rivers, lakes, ponds, and wetlands.

In 1972, the CWA was amended to require National Pollutant Discharge Elimination System (NPDES) permits for discharge of pollutant in “waters of the United States.” The CWA was amended in 1987 to require that the U.S. Environmental Protection Agency (EPA) establish regulations for permitting under the NPDES program of municipal and industrial stormwater discharges. EPA published final regulations regarding stormwater discharges on November 16, 1990. The EPA regulations require that Municipal Separate Stormwater Sewer System (MS4) discharges to surface waters be regulated by an NPDES permit. In addition, the CWA requires states to adopt water quality standards for water bodies and have those standards approved by EPA. Water quality standards consist of designated beneficial uses (e.g., wildlife habitat, agricultural supply, fishing) for a particular water body, along with water quality criteria necessary to support those uses. Water quality criteria are prescribed concentrations or levels of contaminants (e.g., lead, suspended sediment, and fecal coliform bacteria) or narrative statements that represent the quality of water that supports a particular use.

The State Water Board identifies waters of the State that do not meet water quality criteria and places them on the 303 (d) list of impaired waters (State Water Resources Control Board 2022). Once listed, a total maximum daily load (TMDL) must be developed for the impaired water body.

The TMDL address all sources of the impairing pollutants from point, nonpoint, and natural sources that a water body may receive without exceeding applicable water quality standards (with a factor of safety included). Once established, the TMDL is allocated among current and future pollutant sources to the water body. The project is not located along an impaired water body. Sections of the CWA pertaining to regulating impacts on waters of the United States are described below.

Section 402

The 1972 amendment to the CWA (Section 402) established the NPDES permit program. The NPDES permit program outlined in the CWA contains effluent limitation guidelines, water quality requirements, and permit program requirements for discharges to waters of the United States. EPA has overall responsibility for the NPDES program, but administration of the program in California has been delegated to the State Water Board and the nine Regional Water Quality Control Boards (Regional Water Boards) (see the related discussion in the section titled *Porter-Cologne Water Quality Control Act*). The goal of the NPDES nonpoint-source regulations is to improve the quality of stormwater discharged to receiving waters to the “maximum extent practicable” through the use of best management practices (BMPs). The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits.

Section 404

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States. Project proponents must obtain a permit from the U.S. Army Corps of Engineers (USACE) for all discharges of dredged or fill materials into waters of the United States. Section 404 permits may be issued only for the “least environmental damaging practicable alternative.” That is, the authorization of a proposed project discharge is prohibited if an existing practicable alternative would have less of an environmental impact and lacks other significant adverse consequences.

National Pollutant Discharge Elimination System

Municipal Separate Storm Sewers Systems Permits

The 1987 amendment to the CWA established a framework for regulating discharges under the NPDES program. In 1990, the EPA promulgated regulations for permitting stormwater discharges from industrial sites, including construction sites that disturb 5 acres or more, and from MS4s serving a population of 100,000 or more. The November 16, 1990, regulations, known as the Phase I regulations (Title 55 *Federal Register* [FR] 47990), rely on NPDES permit coverage to address stormwater runoff from (1) operators of medium and large MS4s, (2) construction activity disturbing 5 acres of land or more, and (3) 10 categories of industrial activity.

On December 8, 1999, the EPA promulgated regulations known as Phase II. The regulations set forth in the Stormwater Phase II Final Rule (Title 64 FR 68722) require permit coverage for discharges from small municipalities, including nontraditional small MS4s, which are governmental facilities such as military bases, public campuses, and prison and hospital complexes, and from construction sites disturbing at least 1 acre of land. Phase II is intended to further reduce adverse impacts on water quality in receiving waters and aquatic habitats by instituting controls on the unregulated sources of stormwater discharges that have the greatest likelihood of continued environmental degradation. The focus of the Phase II program is the implementation of the following six minimum control measures: public education and outreach,

public participation and involvement, illicit discharge detection and elimination, construction site runoff control, post-construction runoff control, and pollution prevention and good housekeeping practices.

The Phase I Rule required that large MS4s obtain a stormwater discharge permit; the Phase II Rule expands the requirement to small MS4s. Generally, Phase I MS4s are covered by individual permits, while Phase II MS4s are covered by a general permit. Phase I and II MS4 permits require permittees to develop and implement stormwater management plans that include provisions for reducing pollutant discharges from construction activities. Local jurisdictions are responsible for enforcement of those provisions. Future construction activities associated with the proposed project would need to implement soil erosion and sediment control measures that are consistent with County stormwater management plan requirements. Merced County is covered under Water Quality Order No. 2013-0001-DWQ (NPDES), the General Permit for Waste Discharge Requirements (WDRs) for Stormwater Discharges from Small MS4s. The State Water Board adopted the Phase II Small MS4 General Permit on February 5, 2013. Since 2013, the State Water Board has adopted five amendments to the permit. The permit, as amended, is in effect and enforceable.

National Pollutant Discharge Elimination System General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities

In 2022, the State Water Board adopted the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, State Water Board Order No. 2022-0057-DWQ (Construction General Permit), which regulates stormwater discharges from construction sites with 1 acre or more of disturbed area (State Water Board 2022). The Construction General Permit became effective on September 1, 2023. Coverage under the General Construction Permit is obtained by submitting a Notice of Intent (NOI) to the State Water Board, which includes site-specific information and certification of compliance with the terms of the NPDES General Construction Permit. An assessment of project sediment generation and receiving water characteristics must be conducted to determine the project's overall risk level (i.e., 1, 2, or 3), which will determine the required BMPs and monitoring. In addition, a site-specific Stormwater Pollution Prevention Plan (SWPPP) that identifies an effective combination of erosion control, sediment control, and non-stormwater BMPs to reduce construction effects on receiving water quality must also be submitted to the State Water Board. The General Construction Permit requires the SWPPP to be prepared by a Qualified SWPPP Developer and implemented under the supervision of a Qualified SWPPP Practitioner. The SWPPP must define a program of regular inspections of the BMPs and, in some cases, sampling of water quality parameters. The SWPPP also includes demonstration of compliance with all applicable local and regional erosion and sediment control standards, identification of responsible parties, a detailed construction timeline, and a BMP monitoring and maintenance schedule. The SWPPP would specify the forms and records that must be uploaded to the State Water Board's online Stormwater Multiple Application and Report Tracking System (SMARTS), such as quarterly non-stormwater inspection and annual compliance reports. In those parts of the project site that are determined to be at Risk Level 2 or 3, water sampling for pH and turbidity would be required; the SWPPP would specify sampling locations and the schedule, sample collection and analysis procedures, and recordkeeping and reporting protocols.

The BMPs identified are directed at implementing both sediment and erosion control measures and other measures to control potential contaminants. Examples of construction BMPs identified in SWPPPs include using temporary mulching, seeding, or other stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the

storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains; and using barriers, such as fiber rolls and silt fencing, to minimize the amount of uncontrolled runoff that could enter drains or surface water.

Industrial Activities

Various types of industrial activities are covered under the NPDES General Permit for Discharges of Stormwater Runoff Associated with Industrial Activity (Industrial General Permit), Order 2014-0057-DWQ, as amended in 2015 and 2018. These activities include manufacturing operations, transportation facilities where vehicles are maintained (including fueling and washing), landfills, hazardous waste sites, and other similar operations. The General Industrial Permit requires that each facility file an NOI with the Regional Water Board, prepare and implement a SWPPP, and monitor to determine the amount of pollutants leaving the site. The SWPPP does not have to be submitted to the Regional Water Board, but it must be available for review at each facility.

Federal Emergency Management Agency

Congress passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 in response to increasing costs of disaster relief. These acts reduce the need for large publicly funded flood control structures and disaster relief by providing flood insurance and restricting development on floodplains, respectively. FEMA administers the National Flood Insurance Program, which was created by the National Flood Insurance Act of 1968, to provide subsidized flood insurance for those communities that comply with FEMA regulations. FEMA issues flood insurance rate maps that delineate flood hazard zones in the community and show which areas are prone to flooding.

FEMA established the design standard for flood protection, with the minimum level of flood protection for new development determined to be the 1-in-100 annual exceedance probability (AEP) event (i.e., the 100-year flood event). Specifically, where levees provide flood protection, FEMA requires the levee crown to have 3 feet of freeboard above the 1-in-100 AEP water surface elevation, except in the vicinity of a structure, such as a bridge, where the level of the crown must have 4 feet of freeboard for a distance of 100 feet upstream and downstream of the structure.

As noted in the Flood Hazard section of the *Environmental Setting*, the project site is within Zone D. There are no known flood hazards in the vicinity.

State

Porter-Cologne Water Quality Control Act of 1969 and State Water Resources Control Board

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (California Water Code [CWC] Section 13000 et seq.) is California's statutory authority for water quality regulation in the state. The act requires a "report of water discharge" for any discharge of water (liquid, solid, or otherwise) to land, surface waters, or groundwaters that may impair a beneficial use of any groundwater or surface water in the state.

The act established the State Water Board as the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies and ensuring compliance with the federal CWA and the Porter-Cologne Act. The act also divided the state into nine regions and established nine Regional Water Boards to oversee the regions. The project area is under the jurisdiction of the Central Valley Regional Water Board.

The State Water Board and the Regional Water Boards must adopt water quality policies, plans, and objectives to protect the State's waters for use and enjoyment by the people of California. Basin plans are the regional water quality control plans required by both the CWA and the Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California (Central Valley Regional Water Quality Control Board 2011). The act also requires waste dischargers to notify the Regional Boards of their activities through the filing of reports of waste discharge (RWD) and authorizes the State Water Board and Regional Water Boards to issue and enforce WDRs, NPDES permits, Section 401 water quality certifications, or other approvals. The Regional Water Boards also have authority to issue waivers to RWD/WDRs for broad categories of low-threat discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions. In addition to the State Water Board and Regional Water Boards, water quality protection is the responsibility of numerous water supply and wastewater management agencies, as well as city and county governments, and requires the coordinated efforts of these various entities.

California State Nondegradation Policy

In 1968, as required under the federal antidegradation policy, the State Water Board adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into State waters shall be regulated to achieve the highest water quality consistent with the maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of California. The policy can be summarized as follows:

1. Where the existing water quality of water is better than required under existing water quality control plans (basin plans), such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.
2. Any activity that produces waste or increases the volume or concentrations of waste and discharges to existing high-quality waters would be required to meet WDRs, which would ensure (1) pollution or nuisance would not occur and (2) the highest water quality consistent with the maximum benefit to the people of the state would be maintained.

Stormwater Discharges

CWA mandates permits for municipal stormwater discharges. These permits require implementation of controls in order to reduce the discharge of pollutants in stormwater flows to the maximum extent possible. The County General Plan states that developers in unincorporated communities must provide their own storm drainage systems, including adequate capture, transport, and stormwater detention/retention systems, on project sites (County 2013). As part of permit compliance, new development under the proposed project would be required to follow the guidance contained in the County General Plan.

Groundwater Management Act (1992)

The Groundwater Management Act of the California Water Code (Assembly Bill [AB] 3030), signed into law on September 26, 1992, and effective on January 1, 1993, provides guidance for applicable local agencies to develop voluntary Groundwater Management Plans (GMPs) in State-designated groundwater basins. The GMPs allow agencies to raise revenue to pay for measures

that influence management of the basin, including, but not limited to, costs associated with the acquisition of replenishment water, administrative and operating costs, and costs associated with construction of the capital facilities necessary to implement the GMP.

Sustainable Groundwater Management Act (2014)

SGMA consists of three legislative bills, Senate Bill (SB) 1168, AB 1739, and SB 1319. The legislation provides a framework for long-term sustainable groundwater management across California. Under the roadmap laid out by the legislation, local and regional authorities in medium- and high-priority groundwater basins form GSAs that oversee the preparation and implementation of a local GSP.

The project site is partially located in the Delta-Mendota Groundwater Subbasin. Within the Subbasin, six GSPs have been developed in a coordinated fashion, with the goal of achieving sustainability for the Subbasin as a whole. The GSP for the northern and central Delta-Mendota region represents the area of the Subbasin where the project site is located. GSAs will have until 2040 to achieve groundwater sustainability.

Local

The project site would be located on land within Merced County. Local goals and policies stated in the County General Plan that are relevant to the project are presented below. Policies on development within the 100-year floodplain are not included because the project is not located within a regulatory floodplain.

2030 Merced County General Plan

The following goals and policies of the 2030 Merced County General Plan are related to hydrology and water quality.

- **Policy LU-4.4: Efficient Development (RDR).** Require efficient and environmentally sound development, which minimizes impacts on sensitive habitat/species, protects water quality and supply, and provides adequate circulation, within rural centers.
- **Policy NR-3.2: Soil Erosion and Contamination.** Require minimal disturbance of vegetation during construction to improve soil stability, reduce erosion, and improve stormwater quality.
- **Policy PFS-3.1: Stormwater Management Plans.** Require stormwater management plans for all urban communities to reduce flood risk, protect soils from erosion, control stormwater runoff, and minimize impacts on existing drainage facilities.
- **Policy PFS-3.2: Stormwater Facilities in New Development.** Require that new development in unincorporated communities includes adequate stormwater drainage systems. This includes adequate capture, transport, and detention/retention of stormwater.
- **Policy PFS-3.5: Pre-Development Storm Flows.** Require on-site detention/retention facilities and velocity reducers when necessary to maintain pre-development storm flows and velocities in natural drainage systems.
- **Policy PFS-3.6: Retention/Detention Facility.** Encourage stormwater detention/retention project designs that minimize drainage concentrations and impervious coverage, avoid floodplain areas, are visually unobtrusive and, where feasible, provide a natural watercourse appearance and a secondary use, such as recreation.

- **Policy W-1.1: Countywide Water Supply.** Ensure that continued supplies of surface and groundwater are available to serve existing and future uses by supporting water districts and agencies in groundwater management and water supply planning; requiring that new development have demonstrated long-term water supply; and assisting both urban and agriculture water districts in efforts to use water efficiently.
- **Policy W-1.2: Demonstrating Sufficient Water Supply for New Development.** Require all new development within the adopted service area of a water purveyor to demonstrate adequate quantity and quality of water will be available prior to issuing building permits.
- **Policy W-1.7: Water Sufficiency Requirement.** Require new developments to prepare a detailed source water sufficiency study and water supply assessment per Title 22 and SB 610, consistent with any Integrated Regional Water Management Plan or similar water management plan. This shall include studying the effect of new development on the water supply of existing users, with public input.
- **Policy W-2.2: Development Regulations to Protect Water Quality.** Prepare updated development regulations, such as best management practices, that prevent adverse effects on water resources from construction and development activities.
- **Policy W-2.3: Natural Drainage Channels.** Encourage the use of natural channels for drainage and flood control to benefit water quality and other natural resource values.
- **Policy W-2.7: NPDES Enforcement.** Monitor and enforce provisions of the EPA NPDES program to control non-point-source water pollution.
- **Policy W-3.1: Water Availability and Conservation.** Support efforts of water agencies and districts to prevent the depletion of groundwater resources and promote the conservation and reuse of water.
- **Policy W-3.2: Landscape Water Efficiency.** Ensure the conservation of water in urban areas through the implementation of the State Model Water Efficient Landscape Ordinance as implemented in Section 18.38 (Landscaping Standards) of the County Zoning Ordinance.
- **Policy W-3.6: New Construction.** Promote efficient water conveyance systems in new construction, including systems for the recycling of greywater.

Villages of Laguna San Luis Community Plan

The Villages of Laguna San Luis Community Plan (Villages CP) is the long-range guide for growth and development within the 6,200-acre Specific Urban Development Plan area, located west of I-5 along SR 152 and SR 33 in western Merced County. The following goals and policies of the Villages CP are related to hydrology and water quality:

Land Use Plan

- **Goal 3.0:** Develop a community that is responsive to its natural setting and that promotes conservation of water and non-renewable resources and minimizes pollutant emissions.

Community Design Plan

- **Objective 1.E:** A landscaped building setback along State Scenic Highway 152 to enhance the vehicular traveler's views and experience passing through the community.

- **Objective 1.G:** Open space corridors (major drainage courses, utility easements, kit fox corridors) are preserved in their natural state to the extent possible, as parts of a comprehensive open space system.
- **Objective 1.H:** Landscaped public and private facilities that enhance environmental value and physical appearance; improve environmental performance and bio-diversity and promote the conservation of water and preservation of water quality.
- **Objective 2.A:** Development that is blended into or compliments the natural terrain while not negatively effecting scenic quality through excessive grading.
- **Objective 2.E:** Drainageways that are retained in their natural state or made to appear natural if improvements to drainageways are required for public safety.

Open Space Plan

- **Objective 1.B:** Predominant wetlands are retained in their present state or enhanced and incorporated as components of the Open Space System
- **Objective 2.C:** Stormwater retention/detention areas serve as flood control, erosion control, urban runoff purification, parks and recreation, and natural appearing open space amenities.

Flood Control and Drainage Plan

- **Goal 1.0:** Flood control and stormwater drainage facilities adequately manage stormwater runoff flows and quality within the Villages CP.
- **Goal 2.0:** Flood control and stormwater drainage facilities enhance overall community character and provide visual amenity.
- **Goal 3.0:** Flood Control and stormwater drainage facilities enhance wetlands and wetland associated wildlife habitats.

Water and Sewer Infrastructure Plan

The Water and Sewer Infrastructure Plan ensures that adequate infrastructure will be planned and provided to meet the demands of planned development as it occurs in phases within the Villages CP. The intent of the Water and Sewer Infrastructure Plan is to provide a conceptual framework that guides both implementation of facilities and the provision of services associated with the supply of potable water by achieving the following:

- **Goal 1.0:** Water and wastewater infrastructure adequately serves the urban needs of the Villages CP.
- **Goal 2.0:** An urban community with water and wastewater infrastructure systems planned and designed to conserve water resources along with landscape areas designed to conserve water.

Ordinance No. 1923: Stormwater Ordinance

Merced County Ordinance No. 1923, Stormwater Ordinance, was enacted by the County to carry out the enforcement measures found in State Water Board Order No. 2013-0001-DWQ. Ordinance No. 1923 supersedes Ordinance No. 1897 and amends Chapter 9.53 (Regulation of Stormwater) of the Merced County Code. The intent of the ordinance is to reduce pollutants in

stormwater discharges to the maximum extent practicable and by prohibiting non-stormwater discharges to the storm drain system. In order to reduce the volume of stormwater runoff and minimize typical pollutants, the County requires various measures, including, but not limited to, BMPs, a SWPPP, source control measures, post-construction stormwater management, low-impact development design standards, and hydromodification management. The Director of Public Works retains the authority to inspect, sample, and test any discharge deemed necessary to aid in the pursuit of inquiry or record site activities.

3.10.2 Environmental Impacts

This section describes the proposed project's potential impacts on hydrology and water quality. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

Methods for Analysis

The focus of the environmental impact analysis is to determine if construction and operation of the project would alter stormwater runoff patterns, groundwater conditions, and water quality. ICF utilized preliminary site layout plans of the Las Camas solar array and PG&E substation, U.S. Geological Survey topographic data, Natural Resources Conservation Service (NRCS) soils data, Multi-Resolution Land Characteristics (MRLC) land use data, and field observations as inputs into its hydrological modeling of existing and post-project conditions (Appendix 3.10-1). ICF assessed peak-discharge and volume runoff under existing and project conditions for the 10- and 100-year recurrence interval events. ICF assessed velocities and depths of the existing minor drainage on the site, adjacent to Billy Wright Road.

Hydrology and drainage are a function of all contributing subbasins; therefore, the site characteristics described in this section cover a larger area (i.e., "analysis area") and are not isolated to areas within the project site boundary (i.e., the solar project site, gen-tie line, and PG&E substation). Note that Subbasins 10 through 12 and 14 all drain into Subbasin 13 ("Billy Wright Road Flow Route" in Figure 3.10-1). Therefore, the hydrology and drainage analysis presents the cumulative peak discharge and runoff volume at the outlet of Subbasin 13 separately from the results generated by Subbasin 13 individually. The rest of the subbasins are independent (i.e., do not drain into another subbasin within the analysis area).

Stormwater runoff modeling followed the procedures outlined in the Merced County Storm Drainage Design Manual, which uses the NRCS Technical Release 55 method for calculating runoff and graphical peak discharge (NRCS 1986). Land cover types, percent impervious, and hydrologic soil group characteristics were used to determine area-weighted NRCS runoff curve numbers for each subbasin. Determinations of existing land cover types were based on field observations, MRLC land use data, and site photographs.

The runoff modeling assumed the solar panels would function similar to or the same as a tree canopy, temporarily intercepting precipitation aboveground but not altering the volume of precipitation reaching the ground or changing runoff patterns. The modeling also assumed that grazing activities would no longer occur on the solar project site following construction and that vegetation would be allowed to naturally re-establish within the current pastureland. Post-project roads were assumed to be constructed at grade, occupying a 20-foot width around all

panel blocks with a semi-pervious aggregate-road cover type. The PG&E substation improvements and proposed gen-tie line would convert existing grassland/herbaceous land cover to development.

The methodology described above relied on the aquatic resources delineation report (ICF 2022) (Appendix 3.4-2) and a desktop review of the solar project site and vicinity using Google Earth to assess general drainage characteristics as well as the condition of channels, swales, local roadway culverts, and adjoining land uses (Google Earth 2019).

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

Would the project:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
- 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 a substantial erosion or siltation on- or off-site,
 - Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site,
 - Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or
 - Impede or redirect floodflows?
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impacts and Mitigation Measures

Impact WQ-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? (*With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those considered in the previous EIR.*)

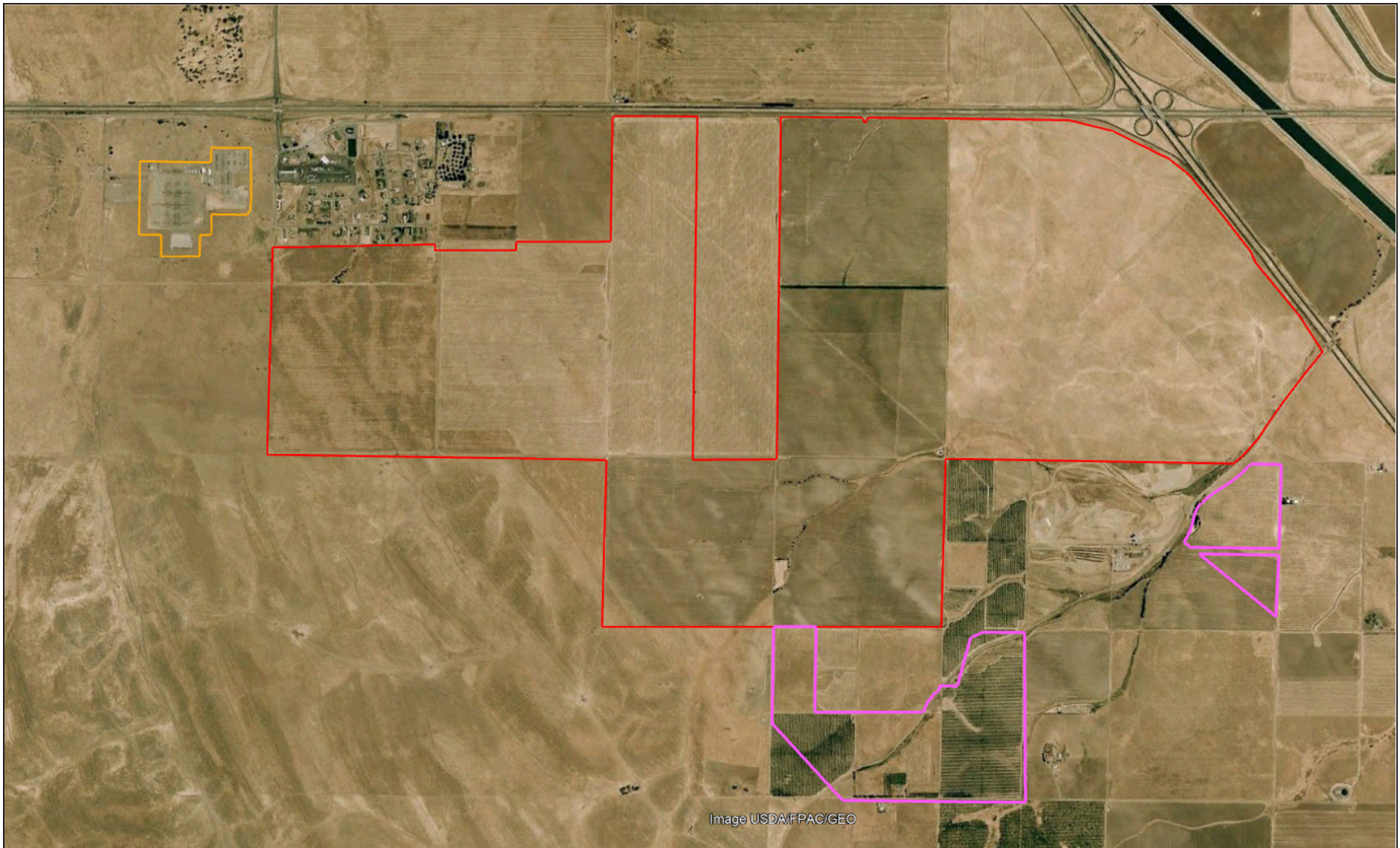
Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts on surface or groundwater quality that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.5-1, 5.5-3, and 5.5-6 on pages 5.5-16–5.5-18, 5.5-24–5.5-23, 5.5-24–5.5-25 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that construction activities could generate sediment, erosion, and other nonpoint source pollutants in on-site stormwater, which could drain to off-site areas. This would be a potentially significant impact. To mitigate these impacts, the Community Plan EIR implemented Mitigation Measure 5.5-1 to prevent the release of pollutants in stormwater off-site and minimize to the maximum extent practicable erosion of on-site soils. With implementation of this mitigation measure, the Community Plan EIR concluded that construction impacts related to soil erosion and water quality would be less than significant. The Community Plan EIR also anticipated potentially significant impacts due to the potential long-term degradation of water quality. The project analyzed in the Community Plan EIR would change the amount and timing of potential waste discharges in stormwater runoff due to land use changes. Implementation of Community Plan policies and the proposed flood control and drainage facilities would minimize the effect of stormwater runoff on water quality; however, it was unknown whether the proposed stormwater features would achieve state and local surface and groundwater quality standards. To mitigate these impacts, the Community Plan EIR identified Mitigation Measure 5.5-3, which would require BMPs for stormwater infiltration basins and identify post-construction requirement, maintenance, and inspection responsibilities. With implementation of Mitigation Measure 5.5-3, the Community Plan EIR concluded that impacts on long-term water quality would be less than significant. The Community Plan EIR also found that the potential for wastewater treatment plant operations and recycled water use to violate permit requirements and water quality standards was less than significant, because wastewater treatment facilities and recycled water and the methods for its use would comply with state requirements and no mitigation was required. Thus, overall the Community Plan EIR concluded that impacts on water quality would be less than significant with mitigation. Hydrologic conditions at and around the project site have not materially changed since certification of the Community Plan EIR. As shown in Figures 3.10-2 and 3.10-3, land in and around the project site was largely undeveloped and pervious when the Community Plan EIR was prepared, and remains so today. No additional impervious area has been added. Therefore, no change to surface or groundwater quality has occurred.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change covering the solar project site to create a Utility-Scale Solar Overlay (EDAW, 2007). The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone



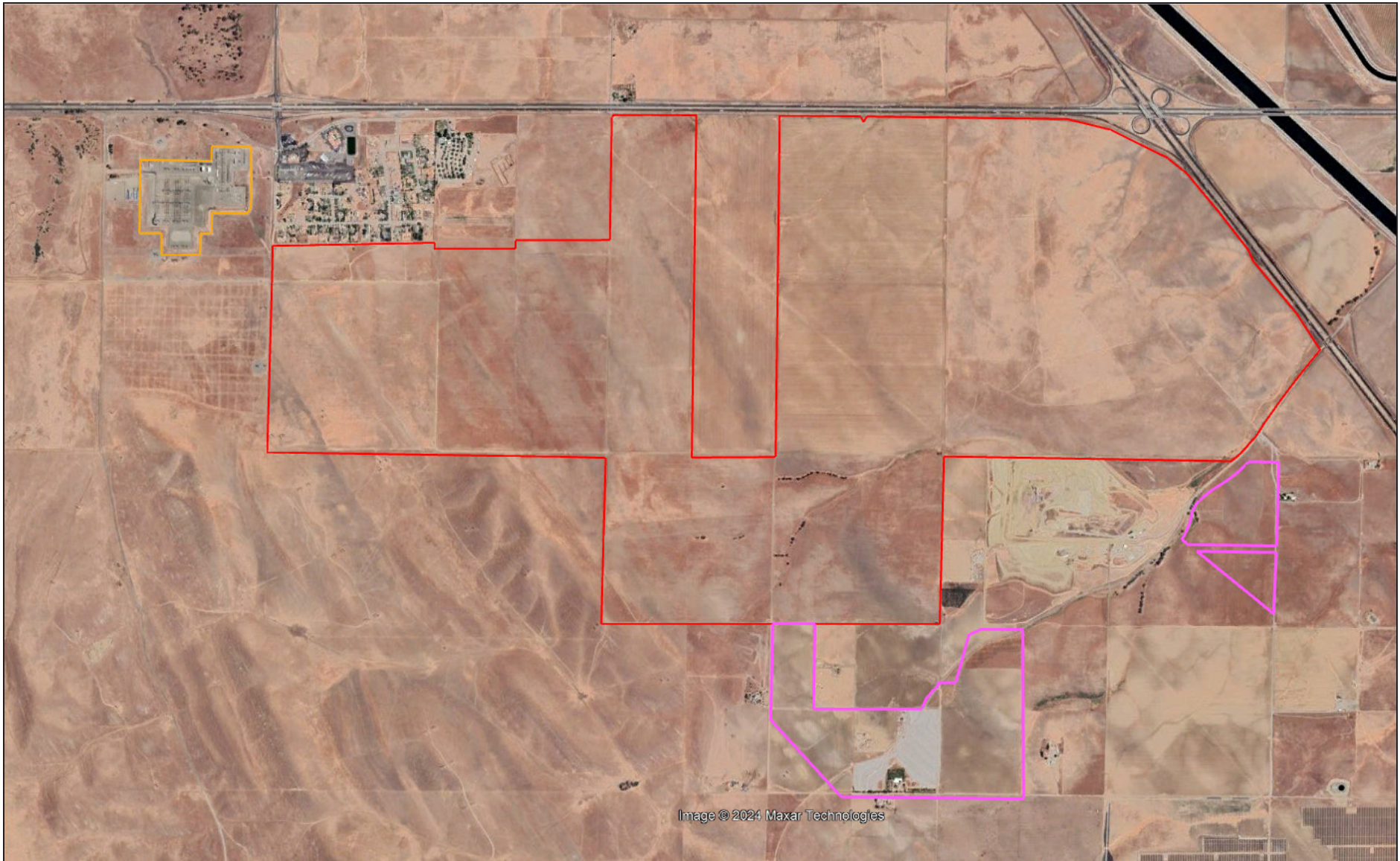
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Legend

- Solar Project Site
- PG&E Los Banos Substation
- Off-Site Residential Redesignation Area



Figure 3.10-2
Site Conditions at the Project Site in August 2006



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- Legend**
- Solar Project Site
 - PG&E Los Banos Substation
 - Off-Site Residential Redesignation Area



Figure 3.10-3
Site Conditions at the Project Site in August 2021

Change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

The proposed project does not propose the construction of any type of physical development within the off-site residential redesignation area. Nor would the proposed project facilitate increased or additional future development beyond that considered in the Community Plan EIR; instead, the proposed project would re-designate certain areas within the Community Plan area in order to maintain the same overall capacity for developing new high-density/medium-density housing contemplated by the Community Plan EIR. All development in this area would be required to comply with all applicable local stormwater runoff and erosion regulations, as well as the policies of the Community Plan and mitigation measures in the Community Plan EIR. The impact identified in the Community Plan EIR is based on the development of the site, given the site characteristics, regardless of the density or intensity of development. A high-density/medium-density residential use of the off-site residential area instead of a Low-Density Residential use would not change the conclusions in the Community Plan EIR, as the same lands would be disturbed, and the same mitigation measures would apply. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

During construction activities, water quality at the solar project site may be impaired by pollutants such as sediment, herbicides, chemicals, or debris. Construction activities could temporarily exacerbate erosion conditions by exposing and disturbing on-site soils. The compaction of soils by heavy equipment may also reduce infiltration capacity and increase the potential for runoff and erosion. Stormwater runoff has the potential to convey construction materials into receiving water bodies that discharge outside the project site and negatively affect water quality. Non-stormwater discharges could result from discharges or accidental spills involving hazardous substances such as fuel, oil, concrete, paint, solvents, cleaning solutions, or other construction materials. In addition, there are no dewatering actions proposed for construction on-site, and potential withdrawals from the Mid-Cal Well for construction (discussed under Impact WQ-2) are not anticipated to impact migration of the groundwater contamination at the Billy Wright Landfill due to the distance between the well and the landfill. Overall, construction impacts may be significant and require mitigation measures.

Implementation of standard construction BMPs and compliance with applicable regulations would prevent disturbed soils from leaving the site. In addition, large construction projects (i.e., disturbing 1 acre or more) and that discharge into waters of the United States are subject to the State Water Board's Construction General Permit. The Construction General Permit requires implementation of a SWPPP, thereby further reducing the potential for erosion. Potential construction impacts associated with erosion would be considered low with implementation of BMPs and the requirements of the Construction General Permit.

The solar project would implement project-specific Mitigation Measure WQ-1 instead of Community Plan Mitigation Measure 5.5-1 to reduce project-specific construction impacts to less than significant. Although Mitigation Measure WQ-1 is similar Community Plan Mitigation Measure 5.5-1, it includes additional BMPs based on the current California Stormwater Quality Association's *Best Management Practice Handbook Portal: Construction* (California Stormwater Quality Association 2019). Therefore, with implementation of project-specific Mitigation Measure WQ-1, impacts from construction of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure WQ-1: Implement Best Management Practices During Solar Project Construction and Decommissioning

Prior to issuance of a permit for construction and decommissioning, the solar project applicant and the applicant's contractors shall acquire any necessary regulatory approvals from the State Water Board and the Central Valley Regional Water Board to ensure compliance with and coverage under the State Water Board NPDES General Construction Permit to the extent that existing approvals do not cover project construction. The applicant shall submit an NOI to the State Water Board and prepare a SWPPP in compliance with the NPDES General Construction Permit requirements. BMPs in the SWPPP would help reduce anticipated impacts related to construction and post-construction activities on stormwater runoff water quality. Implementation of the BMPs defined in the SWPPP including, but not limited to, those stated below, would minimize impacts on local water quality by controlling runoff from erosion and potential contaminants, thereby ensuring stormwater flows and discharges meet water quality standards.

Erosion impacts during construction would be minimized or avoided by incorporating necessary BMPs, such as those listed below, which are based on practices outlined in the California Stormwater Quality Association's *Best Management Practice Handbook Portal: Construction* (California Stormwater Quality Association 2019).

- **Desilting basin and sediment trap:** Construction of a temporary basin designed to remove sediment from runoff would prevent constituents from reaching existing on- and off-site drainages by allowing sediment to settle before discharging water to natural drainages.
- **Erosion control blankets/mats, geotextiles, plastic covers:** These erosion control methods can be used on flat or sloped surfaces to keep soil in place and can be used to cover disturbed soil to prevent runoff.
- **Gravel/sandbag barrier:** A temporary sediment barrier could be constructed using gravel or sand filled bags to prevent sediment from disturbed areas from reaching existing drainages by reducing the volume of sheet flows.
- **Hydraulic, straw, and wood mulch:** The use of these various mulches temporarily stabilizes soil on surfaces with little or no slope.
- **Preservation of existing vegetation:** Preserving the existing vegetation to the maximum extent possible provides protection of exposed surfaces from erosion and can keep sediment in place.
- **Runoff control BMPs:** These measures include grading surfaces to control sheet flow, barriers or berms that force sheet flows around protected areas, and stormwater conveyances such as channels, drains, and swales. These practices and features collect runoff and redirect it to prevent contamination to surface waters. Calculations are made for anticipated runoff, and the stormwater conveyances are constructed, designed, and located to accommodate these flows.

- **Scheduling and planning:** Appropriate scheduling and planning provide ways to minimize disturbed areas, which reduces the amount of activity in the project area that requires protection and minimizes the duration of exposure of disturbed soils to erosion.
- **Stabilized Construction Entrance/Exit.** A graveled area or pad located at points where vehicles enter and leave a construction site can be built. This BMP provides a buffer area where vehicles can drop their mud and sediment to avoid transporting it onto public roads, to control erosion from surface runoff and to help control dust.
- **Storm drain inlet protection:** Protection consists of devices and procedures that detain or filter sediment from runoff, thereby preventing them from reaching drainage systems that will be used post-construction, as well as surface waters.
- **Concrete waste management:** Excess or leftover concrete should be properly disposed of in designated concrete waste facilities.
- **Material delivery and storage practices:** All materials, especially toxic or hazardous materials, should be covered to prevent exposure to stormwater and runoff. Toxic or hazardous materials should also be stored and transferred on impervious surfaces that will prevent immediate exposure to soils. Vehicles and equipment used for material transport and storage, as well as any other vehicles, should be parked in clearly designated areas.
- **Street sweeping and maintenance:** Regular cleaning should occur at the entrances and exits to and from the solar project site to avoid contamination of off-site areas.
- **Solid waste management:** An appropriate amount of conveniently located trash and waste containers should be placed around the solar project site for proper disposal of solid wastes. All receptacles should have lids or covers that will not blow off in windy conditions.
- **Spill prevention and control:** Any spills or releases of materials should be cleaned up immediately and comprehensively. Appropriate and easily accessible cleanup equipment, including spill kits containing absorbents, should be located in several areas around the site. Used cleanup materials should be disposed of properly and in accordance with applicable regulations. Hazardous or toxic material spills must be treated as hazardous waste and be treated and disposed of accordingly.
- **Vehicle and equipment cleaning and refueling:** Vehicles and equipment that regularly enter and leave the solar project site should be cleaned. Additionally, refueling of vehicles and equipment will occur off-site whenever possible. An on-site, designated fueling area with appropriate containment and cleanup materials should be used when off-site refueling is impractical.
- **Vehicle and equipment maintenance:** Off-site maintenance facilities should be used whenever possible. Whenever on-site maintenance is necessary, ensure designated maintenance areas are protected from stormwater runoff and are provided with proper spill cleanup and containment materials.

Operation

Long-term operation of the solar project would not adversely affect water quality or lead to a violation of water quality standards. The largest impact on hydrology would be due to the amount of land converted to impervious surface area. However, the increase in the amount of impervious surface area from existing to project conditions would be minimal (i.e., approximately 43 acres, or 0.91 percent of the total analysis area). The potential for erosion hazards within the solar project

site is low, given the rolling and flat topography of the existing terrain. Under project conditions, the grade would be even lower, at a slope of 3:1 (horizontal:vertical) or less (RRC 2020). It is anticipated that the flatter grade would slow runoff velocities and encourage infiltration into the ground, with sediment being deposited on the ground surface instead of transported into waterways. Water quality treatment would be provided through biological uptake from vegetation and filtration through the soil. In addition, the increase in the peak discharge for the analysis area under project conditions due to the addition of impervious surfaces (1 and 0 percent for the 10- and 100-year storm events, respectively) is considered nominal and unlikely to generate or transport pollutants into surface waters. The re-establishment of vegetation and reduction in grazed area after construction is anticipated to increase infiltration and encourage sediment deposition from runoff.

The project would result in infrequent use of maintenance roads. Operation and maintenance activities would include washing the solar panels once a year. Wash water (containing no soap nor other chemical solvents) would run off the panels and infiltrate into the ground below and not cause sedimentation or other water quality concerns. Pesticide use would be prohibited, but noxious weeds on the solar project site may be controlled through the use of herbicides and/or grazing. Rainfall runoff may transport herbicides to downstream waterways but are unlikely to accumulate at concentrations that would affect water quality. In addition, there are no dewatering actions proposed for operations on-site, and potential withdrawals from the Mid-Cal Well for operation (discussed under Impact WQ-2) are not anticipated to impact migration of the groundwater contamination at the Billy Wright Landfill due to the distance between the well and the landfill. Because operational impacts would be less than significant, the solar project would not be required to implement Community Plan Mitigation Measure 5.5-3. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

The decommissioning plan would ensure that the solar project facilities would be decommissioned and removed and that the solar project site would be restored to pre-construction conditions. Restoration of impervious areas (structures, facilities, access roads) to undeveloped land would decrease stormwater runoff, and revegetation and seeding would increase uptake of pollutants. Mitigation Measure WQ-1, which requires temporary erosion and sedimentation control BMPs, would be implemented to ensure that project-specific impacts due to decommissioning would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Water quality impacts associated with the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

The project would establish an off-site mitigation site to be placed in a conservation easement in perpetuity. Once established, operational maintenance activities at the off-site mitigation site would be minimal and would not affect hydrological conditions. Continued mowing or grazing of the

grassland and roadway maintenance would not generate any water quality or waste discharge violations. Surface water and groundwater quality would not be substantially degraded by mowing, monitoring, or invasive plant management activities. Mitigation Measure WQ-1 would not apply because construction is not proposed for the off-site mitigation site. Therefore, impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Impacts related to water quality are similar to those discussed for the solar project above. Proposed improvements would convert 10.3 acres of undeveloped land into an impervious surface, but this area makes up just 1.1 percent of the total subbasin area (909 acres). PG&E implements standard avoidance and minimization measures (AMMs) and BMPs during construction and operation of projects in its service territory. The following AMM/BMPs would be implemented during each project phase to avoid and/or minimize impacts on surface water and groundwater quality (see Chapter 2, *Project Description*, for more details):

- **PG&E AMM/BMP-1:** Fugitive Dust Control. The PG&E crew will not allow visible dust to pass beyond the PG&E property boundary using dust abatement measures.
- **PG&E AMM/BMP-3:** Oil-Filled Electrical Equipment (OFEE). OFEE will be managed in accordance with protocols defined in ENV-3000P-02-JA01 Job Aid: Handling In-Service Electrical Equipment from the Field.
- **PG&E AMM/BMP-5:** Hazardous Materials Storage. The storage of hazardous materials will be managed according to regulations and best management practices.
- **PG&E AMM/BMP-6:** Local Environmental Field Specialist (EFS) Notification. PG&E personnel will contact the EFS and stop work if any unanticipated or potentially contaminated substances are discovered.
- **PG&E AMM/BMP-7:** Sulfur Hexafluoride (SF₆) Gas Material/Waste Management. PG&E personnel will implement protocols for cleanup, transportation and disposal of any equipment that may contain SF₆ gas byproduct waste.
- **PG&E AMM/BMP-8:** Spill Prevention, Control, and Countermeasure (SPCC) Plan for managing SPCC triggering events (e.g., new oil storage or modification of oil storage that exceeds defined threshold).
- **PG&E AMM/BMP-10:** Stormwater Pollution Prevention Plan (SWPPP). PG&E will prepare and implement a SWPPP to address handling wet and dry spoils during construction and maintenance of the substation.

Implementation of these measures would ensure impacts are less than significant by reducing the likelihood of non-stormwater discharges and/or preventing discharges from leaving the site. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Hydrologic modeling results indicate that the solar project and PG&E substation improvements would not significantly increase peak runoff discharges or substantially degrade surface water or groundwater quality. Future development within the off-site residential redesignation area would be subject to the policies of the Community Plan, and implementation of the off-site mitigation site would result in negligible impacts on hydrology and water quality. Because implementation of the solar project could result in the introduction of sediment and other nonpoint-source pollutants into on-site drainage channels and ultimately off-site drainage channels as a result of temporary construction activities, short-term construction-related water quality degradation would be considered a significant impact. Based on the analysis above, considering the combined impacts of the entire proposed project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site components, with implementation of project-specific mitigation, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Impact WQ-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential for Community Plan buildout to substantially decrease groundwater supplies or interfere substantially with groundwater recharge. Refer to the discussion under Impact 5.5-4 on pages 5.5-23–5.5-24 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. Runoff from the Community Plan area would be collected in a series of stormwater retention and infiltration ponds, allowing runoff to infiltrate into the groundwater. In addition, the Community Plan would not use groundwater wells as a source of water supply. Therefore, no corresponding mitigation measures were proposed for Impact 5.5-4. Thus, overall the Community Plan EIR concluded that impacts on groundwater resources would be less than significant. Groundwater conditions at and around the project site have not materially changed since certification of the Community Plan EIR. In addition, there is no appreciable groundwater recharge within the project site because of the hydrological characteristics of the primary soil types (i.e., silty clays). As shown in Figures 3.10-2 and 3.10-3, land in and around the project site was largely undeveloped and pervious when the Community Plan EIR was prepared, and remains so today. No groundwater extraction wells have been constructed and no additional impervious area has been added in this area since certification of the Community Plan EIR. Therefore, no change in groundwater supplies or recharge has occurred.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change covering the solar project site to create a Utility-Scale Solar Overlay (EDAW, 2007). The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct construction of housing. Although the proposed off-site residential redesignation would increase planned density within the residential redesignation area, it would not change the overall medium-density/high-density residential capacity of the approved Community Plan. Instead, it would redistribute already-approved medium-density/high-density residential capacity to a different area within the Community Plan area. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. The impact evaluated in the Community Plan EIR is based on the development of the site, regardless of the density or intensity of development. Runoff from future development within the off-site residential redesignation area would flow to the stormwater retention and infiltration ponds installed as part of the Community Plan. And while no specific developments have been proposed within the redesignation area, there is no indication that groundwater wells would be used as a source of water supply. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the conclusion in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

Currently, there is no appreciable groundwater recharge within the project site because of the hydrological characteristics of the primary soil types (i.e., silty clays). The project does not propose dewatering during construction. It also does not propose new wells or permanent extraction activities, nor would it remove existing active wells from operation (because none are present on-site).

As discussed in Chapter 2, *Project Description*, water for construction could be supplied by SLWD water agreements or imported from the AKT irrigation well (referred to herein as the Mid-Cal well) located adjacent to SR 33 at the northwest corner of AKT's Mid-Cal property, approximately 4.4 miles north of the project site. The method that is ultimately implemented will depend on which approvals are granted. SLWD water supply includes surface water imports through the Central Valley Project and surface water transfers into SLWD. Therefore, the following discussion focusses on the Mid-Cal well option.

The Mid-Cal well is located in the Delta-Mendota Subbasin on the western edge of the SJREC GSP Group boundary, within the Merced County portion of the SJREC GSP Group area. The Mid-Cal well currently irrigates approximately 80 acres of corn used for dairy cattle feed. The Mid-Cal well is reported by AKT to be approximately 100 feet deep and to produce approximately 1,000 gallons per minute (gpm) (EMKO Environmental, Inc. 2023). According to pumping records provided by AKT, approximately 502 af were pumped from the well between August 2021 and August 2022 (EMKO Environmental, Inc. 2023).

Construction of the proposed project is anticipated to require 370 af (approximately 121 million gallons) of water during the approximately 70-week construction period, or approximately 5.3 af per week (EMKO Environmental, Inc. 2023). The Water Supply Assessment prepared for the project (Appendix 3.19-1 of this EIR) evaluated the sufficiency of the region's water supply for construction of the project, based on groundwater conditions in the Delta-Mendota Subbasin, projected water budget for the northern and central Delta-Mendota region evaluated under climate change conditions, and available surface water supplies. If the Mid-Cal well supplied water, the annual net project groundwater use for construction needs would be no more than 0.14 percent of the average total groundwater inflow, 0.24 percent of the annual average groundwater pumping volume, and 0.94 percent of the annual overdraft, in the GSP area (EMKO Environmental, Inc. 2023). Any decline in groundwater levels due to the pumping to provide the construction water demand would result in nominal decreases in local groundwater levels, those levels would recover rapidly in the years following the temporary construction period, and the volume extracted would not measurably affect the groundwater budget for the subbasin (EMKO Environmental, Inc. 2023). In addition, the short-term and temporary increase in pumping at the Mid-Cal well to meet the construction water demands would not result in a decline of pumping levels to uneconomic depths, land subsidence, or significant water quality or other significant environmental damage (EMKO Environmental, Inc. 2023). In short, due in part to the temporary nature of the construction water use (the majority of the project's overall water demand), the project would not adversely affect the long-term management of the Subbasin and would not affect groundwater sustainability efforts.

New extraction activities are not proposed at the solar project site to support construction. The project would be aligned with the GSP goal to prevent the depletion of interconnected surface water (Impact WQ-5). Impact WQ-1 noted that construction may cause temporary impacts related to surface and groundwater quality. The groundwater required for construction represents a small proportion of the average groundwater inflow and average annual pumping, and the project's proposed use is consistent with the GSP's sustainability criteria, such that the project's effects on groundwater volumes and groundwater sustainability within the Subbasin would not be significant. Therefore, impacts from construction of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

The solar project facilities, including the on-site substation, support structures associated with the gen-tie line, access roads, and battery storage area, would create approximately 43 acres of impervious surface area, or less than 1 percent of the area within the project site boundary. Although the trackers that would support the solar panels would add a minor amount of impervious coverage, the solar panels themselves would temporarily intercept rainwater, which would ultimately run off the panels and onto the ground. Likewise, most of the rainwater that would run off

the impervious project facilities (e.g., substation building) would run onto neighboring soils and infiltrate into the ground, similar to existing conditions. The project does not propose dewatering during operation.

As discussed in Chapter 2, *Project Description*, water for operation could be supplied by SLWD water agreements or imported from the Mid-Cal well described above under the construction analysis. The method that is ultimately implemented will depend on which approvals are granted. SLWD water supply includes surface water imports through the Central Valley Project and surface water transfers into SLWD. Therefore, this discussion focusses on the Mid-Cal well option. The project's operational water demand is anticipated to be approximately 5 af per year over an approximate 30-day period each year for panel washing and irrigation (EMKO Environmental, Inc. 2022a and 2022b). The ongoing 5 afy operational water needs are equivalent to less than 1 percent of the current annual groundwater production from the Mid-Cal well. Any effects on groundwater levels and supply would be imperceptible. Any water use during operation for panel washing applied at a higher rate would infiltrate back into the ground after it is applied to the project site. As the project's operational needs are only a small fraction of its construction water needs, the project would not adversely affect the long-term management of the Subbasin and would not affect groundwater sustainability efforts.

Impact WQ-1 noted that the additional impervious surface area and long-term operation of the site are not anticipated to degrade groundwater quality because potential eroded sediments are likely to be deposited on the ground surface. Furthermore, runoff does not readily percolate into the Subbasin. The groundwater required for operation represents a small proportion of the average groundwater inflow and average annual pumping such that the project's effects on groundwater volumes and groundwater sustainability within the Subbasin would be de minimis. Therefore, impacts from operation of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning and site reclamation after the 35-year lifespan of the solar project would ensure the conversion of soils and affected areas back to pre-construction activities. Structures, facilities, and native grade roads would be removed, reducing the impervious area of the site. Infiltration is anticipated to increase due to revegetation, uncompacted soils, and removal of impervious areas. No groundwater use is proposed for decommissioning and no project-specific impacts on groundwater levels are anticipated. Therefore, impacts from decommissioning of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Groundwater usage and impacts associated with the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

The project would establish an off-site mitigation site to be placed in a conservation easement in perpetuity, and would not involve any construction or operational activities that would affect use hydrological conditions. Continued mowing or grazing of the grassland and roadway maintenance would not decrease or interfere substantially with groundwater recharge. Sustainable groundwater management of the basin would not be affected by mowing, monitoring, or invasive plant management activities. No groundwater use is proposed for construction or operation of the off-site mitigation site, and no project-specific impacts on groundwater levels are anticipated. Therefore, impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Impacts related to groundwater supply and recharge due to the PG&E substation improvements are included in the well analysis discussed for the solar project (EMKO Environmental, Inc. 2023), because water will be required during construction for dust control and was factored into the overall project's construction water estimate. Because the project's overall construction water usage would not substantially decrease groundwater supplies such that the project may impede sustainable groundwater management of the basin and the PG&E substation improvements are expected to use only a small fraction of the project's construction water needs, the PG&E substation improvements would not substantially decrease groundwater supplies such that they may impede sustainable groundwater management of the basin. The PG&E substation improvements would result in a nominal amount of impervious surface area in Subbasin 15 (maximum 10.3 acres); the reduction in infiltration would be minimal, and in any event as noted above, there is currently no appreciable groundwater recharge within the project site because of the hydrological characteristics of the site's soil. The PG&E substation improvements therefore would not substantially interfere with groundwater recharge. Thus, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

No groundwater from the project site would be used for project construction or operation. The relatively small volume of water imported from SLWD agreements or the Mid-Cal well for construction and operation of the solar project and PG&E substation improvements would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. Therefore, based on the analysis above, the combined impacts of the entire proposed project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site components, would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact WQ-3: 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 i) result in a substantial erosion or siltation on- or off-site, ii) substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site, iii) create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or iv) impede or redirect floodflows? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts related to stormwater drainage that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.5-2 on pages 5.5-18–5.5-21 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan would result in an increase in impervious surfaces within the Community Plan area, which would lead to an alteration of then-existing drainage pattern of the area and increase in stormwater runoff compared to then-existing conditions. The increased surface runoff could result in a greater potential for off-site and on-site flooding, erosion, or siltation. However, the Community Plan includes flood control and drainage concepts and implementation of Community Plan policies that would prevent on-site flooding and erosion and would reduce project generated stormwater and stormwater-related flooding damage within the Community Plan area. Future implementation plans would provide additional site-specific design recommendations to ensure stormwater storage and discharge capacity sufficient to protect the site and capture additional sources of polluted runoff. The Community Plan would not impede or redirect floodflows because it is not located within a FEMA-designated SFHAs or mapped regulatory floodway. Therefore, no mitigation was required for Impact 5.5-2. Thus, overall the Community Plan EIR concluded that impacts would be less than significant. Drainage conditions at and around the project site have not materially changed since certification of the Community Plan EIR. As shown in Figures 3.10-2 and 3.10-3, land in and around the project site was largely undeveloped and pervious when the Community Plan EIR was prepared, and remains so today. No additional impervious area has been added and no new, significant drainages have formed. Therefore, drainage conditions in this area are unchanged.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change covering the solar project site to create a Utility-Scale Solar Overlay (EDAW, 2007). The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct construction of housing. Although the proposed off-site residential redesignation would increase planned density within the residential redesignation area, it would not change the overall medium-density/high-density residential capacity of the approved Community Plan. Instead, it would redistribute already-approved medium-density/high-density residential capacity to a different area within the Community Plan area. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan. The impact evaluated in the Community Plan EIR is based on the development of the site, regardless of the density or intensity of development in a specific location. Further, the off-site residential redesignation site is not located in a FEMA-designated SFHA or mapped regulatory floodway. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

Construction activities could temporarily alter drainage patterns by exposing and disturbing on-site soils. The compaction of soils by heavy equipment may also reduce infiltration capacity and increase the potential for runoff and erosion. Therefore, construction impacts may be significant and require mitigation measures. As described in Impact WQ-1, the solar project would implement project-specific Mitigation Measure WQ-1 instead of Community Plan Mitigation Measure 5.5-1 to reduce project-specific construction impacts to less than significant. BMPs in the SWPPP would reduce the potential for siltation, additional runoff, or erosional concerns related to changes in the drainage patterns. The solar project site is not located within FEMA-designated SFHAs or mapped regulatory floodways. In addition, floodflows would not be impeded or redirected. With implementation of project-specific Mitigation Measure WQ-1, impacts from construction of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Operation

The solar project would have the potential to change drainage patterns in the project area through the introduction of new impervious surfaces, grading, and revegetation of existing pastures and hay fields. The largest impact on hydrology would be due to the amount of land converted to impervious surface area. However, the increase in the amount of impervious surface area from existing to project conditions would be minimal (i.e., approximately 43 acres, or 0.91 percent of the total analysis area). Grading on the solar project site would create minor modifications within existing drainage paths, considering the mostly flat or rolling topography of the existing terrain. However, the layout of the solar arrays and gen-tie poles would not encroach upon the riverine feature in the southeastern portion of the site. Instead, the solar arrays would be positioned largely in areas with sheet flow and upgradient of existing channelized flows. Maintenance roads would be installed at the existing grade and therefore would not impede or redirect floodflows. Therefore, the flow paths for channelized water within the solar project site and at the exit points would be unchanged.

The model results show no changes in depth and velocity under project conditions for the Subbasin 13 outlet with implementation of the solar project. Therefore, project conditions are not anticipated to result in physical changes due to the actions of water in the channels such as scour that could expand or deepen the existing drainage. Drainage would not exceed maximum channel capacity under the 10- or 100-year storm event. During the 100-year event, under project

conditions, the Subbasin 13 outlet would generate flows to a depth of 0.8 feet below the top of the bank. The potential for erosion hazards within the solar project site is low, given the rolling and flat topography of the existing ground terrain. Under project conditions, the grade would be even lower, at a slope of 3:1 (horizontal:vertical) or less (RRC 2020). It is anticipated that the flatter grade would slow runoff velocities and encourage infiltration into the ground before the runoff reaches the drainage. Therefore, the increase in peak discharge and volume runoff would not be substantial, and significant erosion and siltation on- or off-site would not be anticipated to occur because of the solar project.

The increase in the volume of runoff for the analysis area under project conditions (i.e., 7 and 3 percent for the 10- and 100-year storm events, respectively) is considered nominal and would be absorbed into the on-site soils. Although the majority of solar project site grade is relatively flat, with minimal elevation differential, cut-and-fill slopes would be graded to a slope of 3:1 (horizontal:vertical) or less (RRC 2020). It is anticipated that the flatter grade would slow runoff velocities and encourage infiltration into the ground. The runoff modeling assumed that the solar panels would temporarily intercept precipitation aboveground but would not alter the volume of precipitation reaching the ground or changing runoff patterns because rainwater falling on the panels would flow off the panels and onto the ground (Clearwater Hydrology 2013). Therefore, project conditions are not anticipated to increase flooding or alter flood mapping within the project area.

The increase in the peak discharge for the Bill Wright Road drainage at the I-5 crossing under project conditions (i.e., 0 and 1 percent for the 10- and 100-year storm events, respectively) is considered insignificant and would be absorbed into the on-site soils. Similarly, the increase in volume runoff (i.e., 4 and 2 percent for the 10- and 100-year storm events, respectively) is considered nominal. Runoff from the drainage outflows through a culvert under I-5; the drainage is not tributary to other receiving water bodies or stormwater treatment facilities. The nominal changes in peak discharge and runoff volume under project conditions are not anticipated to exceed the capacity of the existing culvert. No new stormwater facilities are planned outside the project site on the ephemeral drainage. Project conditions are not expected to increase stormwater runoff or pollutants substantially such that new drainage facilities would be necessary. Runoff would not exceed the capacity of stormwater drainage systems, and there would be no additional sources of polluted runoff.

The day-to-day operation of the site is not anticipated to substantially alter the existing drainage pattern of the site or area. Maintenance of the solar project would not alter the existing ephemeral drainage or create additional impervious surfaces. As discussed in Impact WQ-1, wash water for the solar panels would run off the panels and infiltrate into the ground below and not cause sedimentation, additional runoff, or erosional concerns. The solar project site is not located within a FEMA-designated SFHAs or mapped regulatory floodways. In addition, floodflows would not be impeded or redirected. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

The decommissioning and site reclamation plan would ensure that the solar project facilities would be removed and that the solar project site would be generally restored to pre-construction conditions. The site would retain existing grades following reclamation, and no existing drainages would be altered. Increased infiltration due to removal of impervious areas, revegetation, and uncompacted soils is anticipated to reduce runoff flows and encourage sediment deposition. Temporary erosion and sedimentation control BMPs would be used during decommissioning and restoration to minimize sources of polluted runoff. Therefore, impacts from decommissioning of the

solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Drainage impacts associated with the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

The project would establish an off-site mitigation site to be placed in a conservation easement in perpetuity. Establishment of the off-site mitigation site would not include any activities that would affect the existing drainage pattern of the site. Continued mowing or grazing of the grassland, monitoring activities, roadway maintenance, and invasive plant management activities would not result in substantial erosion, increased runoff, or exceed existing stormwater systems. Drainage patterns and the rate and amount of surface runoff would be similar to existing conditions. No FEMA-designated SFHAs or mapped regulatory floodways exist at the off-site mitigation site. Therefore, impacts from off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The PG&E substation improvement area lies within Subbasin 15. Similar to the solar project site, the PG&E substation improvements are expected to result in a minimal increase in impervious surface within a flat area of approximately 10.2 acres. Volume runoff in Subbasin 15 would nominally increase from 14 to 17 af. Therefore, project conditions are not anticipated to increase runoff or flooding or alter drainage patterns within the project area.

The PG&E substation improvements would not contribute runoff to an existing or planned stormwater drainage system. In addition, the PG&E substation improvements would not be located within a FEMA-designated SFHA or mapped regulatory floodway, and floodflows would not be impeded or redirected. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

The project would not substantially alter the existing drainage pattern of the site. The increase in impervious area and subsequent runoff would not be substantial, and significant flooding, erosion, and siltation on- or off-site would not be anticipated to occur because of the project. However, construction activities could temporarily alter drainage patterns and increase the potential for runoff and erosion. Based on the analysis above, considering the combined impacts of the entire proposed project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site components, with implementation of project-specific mitigation, impacts would be less than significant, consistent with the Community Plan EIR

conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact WQ-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts from on-site flooding risk from potential for dam failure that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.5-5 on page 5.5-24 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that although a limited portion of the Community Plan area is included in the inundation zone for a failure of the San Luis Dam, in the remote event the dam fails, the Community Plan area is protected by a drainage divide that would provide natural flood protection from dam inundation flood waters and no mitigation was required. The proposed solar project would not impact this drainage divide, which is located outside of the proposed project area (County, 2012b). Thus, overall the Community Plan EIR concluded that impacts would be less than significant. Inundation potential at and around the project site has not materially changed since certification of the Community Plan EIR. As shown in Figures 3.10-2 and 3.10-3, land in and around the project site was largely undeveloped and pervious when the Community Plan EIR was prepared, and remains so today. No additional impervious area has been added and no new flooding hazards have formed. Therefore, inundation potential in this area is unchanged.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change covering the solar project site to create a Utility-Scale Solar Overlay (EDAW, 2007). The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct construction of housing. Although the proposed off-site residential redesignation would increase planned density within the residential redesignation area, it would not change the overall medium-density/high-density residential capacity of the approved Community Plan. Instead, it would redistribute already-approved medium-density/high-density residential capacity to a different area within the Community Plan area. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan. The impact evaluated in the Community Plan EIR is based on the development of the site, regardless of the density or intensity of development in a specific location.

Further, there are no flood hazards because the project site is not located in a FEMA–designated SFHA or mapped regulatory floodways. The area is outside the potential dam failure inundation areas for San Luis Dam, O’Neill Forebay, Little Panoche Reservoir, Lake Yosemite, McClure Lake, and Los Banos Creek Detention Reservoir. There are no tsunami zones in the area vicinity. In addition, there is no risk of releasing pollutants due to project inundation because no development is proposed that would alter site hydrology, and no pollutants would be stored on-site. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

No FEMA-designated SFHAs, mapped regulatory floodways, or tsunami or seiche zones exist in the project area, which is outside the potential dam failure inundation areas mentioned above. Therefore, impacts from construction of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

No FEMA-designated SFHAs, mapped regulatory floodways, or tsunami or seiche zones exist in the project area, which is outside the potential dam failure inundation areas mentioned above. Therefore, impacts from operation of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

No FEMA-designated SFHAs, mapped regulatory floodways, or tsunami or seiche zones exist in the project area, which is outside the potential dam failure inundation areas mentioned above. Therefore, impacts from decommissioning of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site that is outside of the Community Plan boundary has similar physical characteristics as the portion that is within Community Plan boundary, and as a result, impacts associated with this portion of the solar project site are the same as discussed above.

Off-Site Mitigation Site

No FEMA-designated SFHAs, mapped regulatory floodways, or tsunami or seiche zones exist in the off-site mitigation site. The site boundary partially overlaps with the potential dam failure inundation area for the Los Banos Creek Detention Reservoir. However, there is no risk of a release of pollutants due to project inundation because no development is proposed that would alter site hydrology, and no pollutants would be stored on-site. Therefore, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more***

severe significant impacts related to the release of pollutants due to project inundation at the off-site mitigation site would result beyond those identified in the previous EIR and no additional mitigation would be required.

PG&E Substation Improvements

No FEMA-designated SFHAs, mapped regulatory floodways, or tsunami or seiche zones exist in the PG&E substation improvements area, which is outside the potential dam failure inundation areas. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

As discussed for the individual project elements above, the potential for a release of pollutants due to project inundation would be minimal to non-existent because of the geographic location. Therefore, the combined impacts of the entire proposed project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site components, would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact WQ-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those considered in the previous EIR.)

Impacts Identified in the Previous EIR

As discussed in WQ-1, the Community Plan EIR evaluated the potential impacts on surface and groundwater quality that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.5-1, 5.5-3, and 5.5-6 on pages 5.5-16–5.5-18, 5.5-24–5.5-23, 5.5-24–5.5-25 of the Community Plan EIR, which is incorporated by reference. The Community Plan found that buildout of the Community Plan could generate impacts on surface and groundwater quality, which required Mitigation Measures 5.5-1 and 5.5-3 to reduce impacts to a less-than-significant level. By minimizing impacts on short-term and long-term water quality, buildout of the Community Plan would not conflict with management of the Subbasin.

As discussed in WQ-2, the Community Plan EIR evaluated the potential impacts on groundwater supplies and groundwater recharge that could result from implementing the Community Plan. Refer to the discussion under Impact 5.5-4 on pages 5.5-23–5.5-24 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. Therefore, impacts on groundwater recharge would be less than significant and would not conflict with the regional GSP. Surface water and groundwater conditions at and around the project site have not materially changed since certification of the Community Plan EIR. As shown in Figures 3.10-2 and 3.10-3, land in and around the project site was largely undeveloped and pervious when the Community Plan EIR was prepared, and remains so today. No additional impervious area has been added and no new, significant drainages have formed. Therefore, surface water and groundwater conditions in this area are unchanged.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change covering the solar project site to create a Utility-Scale Solar Overlay (EDAW, 2007). The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct construction of housing. Although the proposed off-site residential redesignation would increase planned density within the residential redesignation area, it would not change the overall medium-density/high-density residential capacity of the approved Community Plan. Instead, it would redistribute already-approved medium-density/high-density residential capacity to a different area within the Community Plan area. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. The impact evaluated in the Community Plan EIR is based on the development of the site, regardless of the density or intensity of development in a specific location. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

As discussed in Impacts WQ-1 and WQ-3, potential construction impacts on water quality and drainage patterns would be considered less than significant with implementation of BMPs and the requirements of the Construction General Permit. In the Impact WQ-2 discussion, the groundwater required for construction was found to represent a small proportion of the average groundwater inflow and average annual pumping that would have only a de minimis impact on sustainability within the Subbasin. The project would be in alignment with water quality standards and beneficial uses of water, as defined in the Basin Plan. As discussed under Impacts WQ-1 and WQ-3, implementation of project-specific Mitigation Measure WQ-1 in lieu of Community Plan EIR Mitigation Measure 5.5-1 would reduce project-specific construction impacts to less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure WQ-1: Implement Best Management Practices During Solar Project Construction and Decommissioning. See Impact WQ-1.

Operation

As discussed in Impact WQ-1, long-term operations would not adversely affect water quality or lead to a violation of water quality standards. As discussed under Impact WQ-1, project-specific operation impacts would be less than significant. Impact WQ-3 concluded that, although project conditions would alter existing drainage patterns, the proposed project would not generate or transport substantial additional sources of sediment or polluted runoff. In addition, Impact WQ-3 concluded that maintenance of the proposed project would not generate or transport substantial additional sources of sediment or polluted runoff. The re-establishment of vegetation is anticipated to increase infiltration and sediment deposition from runoff. Wash water (containing no soap or other chemical solvents) would run off the panels and infiltrate into the ground below and not create water quality concerns. The project would be in alignment with water quality standards and beneficial uses of water, as defined in the Basin Plan.

As discussed in Impact WQ-2, operation and maintenance of the solar project would not adversely affect long-term management of the Subbasin or groundwater sustainability efforts or conflict with the goals of the GSP. Therefore, impacts from operation of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

The discussions in Impact WQ-1 and Impact WQ-3 determined that restoration of the site to pre-project conditions would not create substantial impacts on water quality, and the site's drainage patterns would not be in conflict with the Basin Plan. Removal of impervious areas and revegetation are anticipated to increase infiltration and groundwater recharge, in alignment with the GSP. As discussed under Impact WQ-1, implementation of Mitigation Measure WQ-1 would ensure that project-specific decommissioning impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site that is outside of the Community Plan boundary has similar physical characteristics as the portion that is within Community Plan boundary, and as a result, impacts associated with this portion of the solar project site are the same as discussed above.

Off-Site Mitigation Site

Establishment and management of the off-site mitigation site would not affect use of the site or hydrological conditions. Continued mowing or grazing of the grassland, monitoring activities, roadway maintenance, and invasive plant management activities would not result in substantial impacts on surface water or groundwater quality. There would be no impact on groundwater recharge and supply. Therefore, the off-site mitigation site would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and impacts would be less than significant, consistent with the Community Plan EIR conclusion.

Mitigation Measure WQ-1 would not be implemented because construction is not proposed for the off-site mitigation site. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The PG&E substation improvements would not create any potential water quality impacts that conflict with or obstruct implementation of the Basin Plan for the reasons stated above. Changes in impervious area due to improvements would not adversely affect the long-term management of the Subbasin or groundwater sustainability efforts or conflict with the goals of the GSP. AMMs/BMPs implemented during each project phase would avoid and/or minimize impacts on surface water and groundwater quality. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

The project complies with the Basin Plan and GSP, and would not materially affect groundwater sustainability. Proposed features would not substantially impact water quality and groundwater during operation. Future development within the off-site residential redesignation area would be subject to the policies of the Community Plan, and implementation of the off-site mitigation site would result in negligible impacts on groundwater sustainability. Implementation of project-specific Mitigation Measure WQ-1 would reduce solar project-specific construction impacts related to conflicting with a water quality control plan or sustainable groundwater management plan to less than significant. Based on the analysis above, when considering the combined impacts of the entire proposed project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site components, with implementation of project-specific mitigation, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

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3.11 Land Use and Planning

This section identifies and evaluates the project's potential impacts on land use and planning, including the physical division of an established community, and conflicts with land use plans, policies, and regulations. This section also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site General Plan amendment are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. These include concerns regarding land use compatibility with the Billy Wright Landfill and the off-site General Plan amendment, and concerns regarding the solar project hindering the landfill's ability to expand in the future.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.11.1 Existing Conditions

Environmental Setting

Regional Setting

Merced County is located within the Central Valley, and between the Sierra Nevada and Diablo mountain ranges. The county is approximately 1,980 square miles, and has a total population of approximately 286,461 people as of July 2021 (U.S. Census Bureau 2022). Approximately 24,128 acres of the county are located within the six incorporated cities, which are Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced (County of Merced [County] 2013). In addition to the incorporated cities, the county also contains 11 urban communities, including Castle, Delhi, Fox Hills, Franklin—Beachwood, Hillmar, Le Grand, Panada, Santa Nella, University Community (associated with the University of California at Merced), Villages of Laguna San Luis, and Winton. Agricultural operations are a key part of the county's economy, with agricultural commodities grossing approximately \$3.4 billion in 2020 (Merced County Association of Governments 2022). Merced County is surrounded by Stanislaus County to the north, Madera and Mariposa Counties to the east, Fresno County to the south, and San Benito and Santa Clara Counties to the east.

Solar Project Site

The solar project site is located on approximately 1,741 acres of land in the western portion of the county at the southwest corner of the intersection of State Route (SR) 33/SR 152 and Interstate 5 (I-5), and can be accessed via Billy Wright Road. The solar project site includes the following APNs: 078-160-012, 078-160-013, 078-160-047, 078-160-056, 078-160-060, 078-172-001, 078-190-004, and 078-190-005, excluding a portion of APN 078-172-001. The solar project site is comprised of predominantly undeveloped, non-native annual grassland, with a topography that is mostly flat or gently rolling at an average of an approximately 4.9 percent slope. Elevation on the solar project site ranges from approximately 220 feet above sea level at the lowest point to 558 feet at the highest point. The steeper slopes are located near the southwest corner of the solar project site and along a riverine feature in the southern portion of the site.

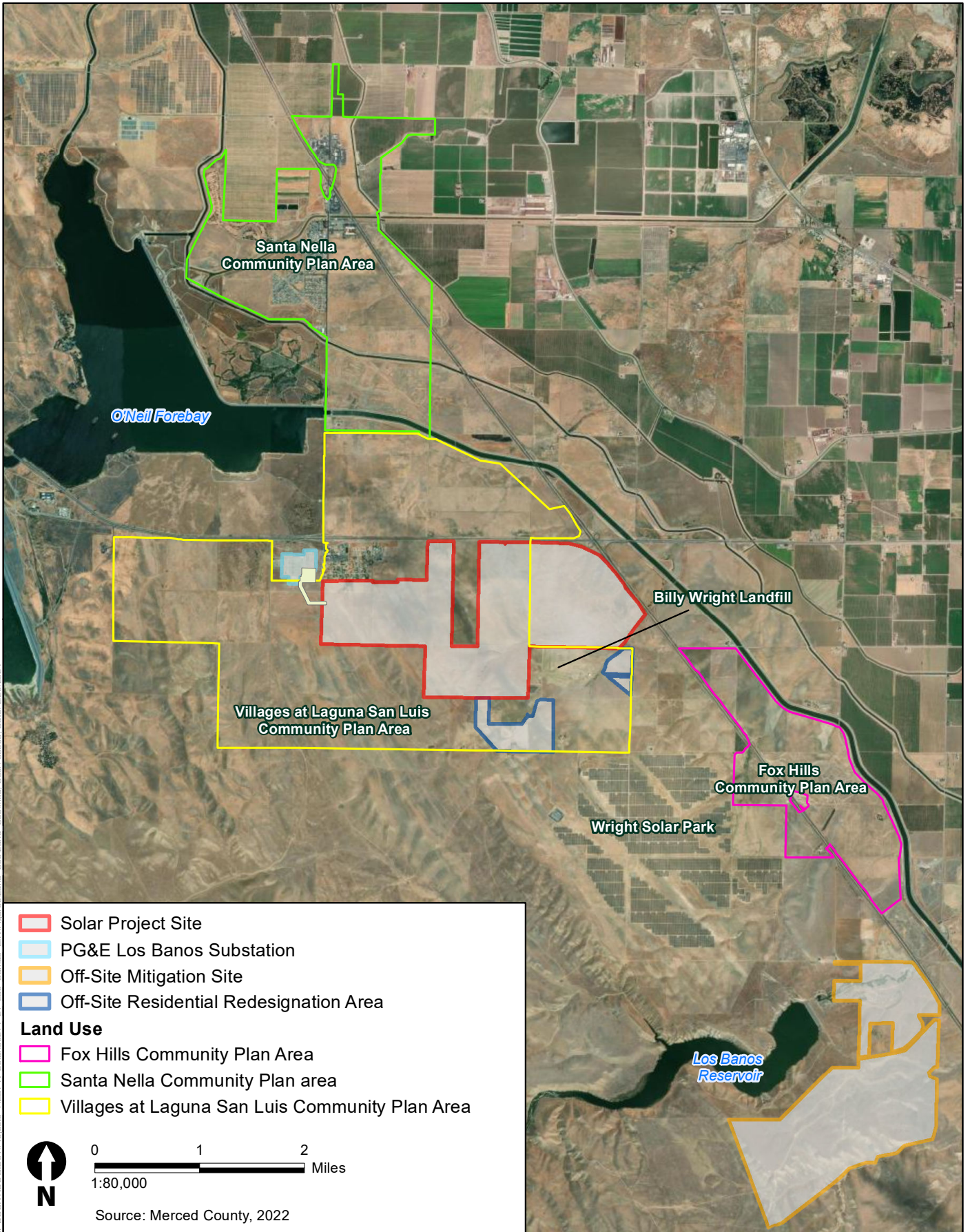
A review of aerial imagery dating back to 1998 shows a history of various crop types over much of the solar project site (Google 2020). The aerial imagery from 1998 indicates that tree orchards were the dominant crop, but this changed to dry farming practices sometime prior to 2004. Since 2004, aerial imagery shows dry farming has been the dominant agricultural practice. However, by 2018, aerial imagery shows that the dry farming practices has been reduced to an estimated 50 percent of the solar project site. Currently, the majority of the solar project site is fallowed agricultural land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming. Approximately 1,736 acres of the solar project site have been designated under the State Department of Conservation's Farmland Mapping and Monitoring Program (FMMP). The FMMP designations for the site include: approximately 1,511.26 acres of Farmland of Local Importance; approximately 0.02 acres of Farmland of Statewide Importance; approximately 224.88 acres of Grazing Land; and approximately 0.05 acres of Unique Farmland. None of the parcels at the solar project site are under Williamson Act contract.

There are four underground utility easements that cross the eastern portion of the site, and one transmission line easement that crosses the southwestern portion of the site. A San Luis Water District (SLWD) water line and corresponding 70-foot-wide easement also cross the site through the western portion. In addition, a 70-foot-wide access easement for the Merced County Regional Waste Authority (RWA) traverses the solar project site in the north to south direction; the easement is in association with the Billy Wright Landfill, which is located to the south of the solar project site.

As described in more detail below under *Regulatory Setting*, the solar project site is designated as Urban Community (approximately 1,180 acres) and Agricultural (approximately 561 acres) with a Highway Interchange Center designation under the *2030 Merced County General Plan*. The Urban Community Designation is associated with the *Villages of Laguna San Luis Community Plan*, which includes several land use designations on the solar project site, including residential, commercial, industrial, and open space designations. In addition, the project site is generally zoned for commercial, residential and agricultural uses under the Merced County Zoning Code. The urban components of zoning for the site include commercial, residential, manufacturing, and highway interchanges which encompass approximately two thirds of the project site. Agricultural zoned land designations encompass the remaining one third of the project site.

The area surrounding the solar project site is rural in character. As depicted in Figure 3.11-1, there is a residential subdivision, Oasis West recreational vehicle (RV) park, and commercial area, at the junction of SR 152 and SR 33, north of the solar project site and east of the PG&E Los Banos substation (described in more detail below). The residential subdivision and RV park abut the solar project site's northern boundary. The residential subdivision is comprised of approximately 60

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**Figure 3.11-1
Existing Land Uses**

single-family detached housing units on approximately 1-acre lots, while the RV Park provides approximately 115 RV spaces. The Billy Wright Landfill is adjacent to the solar project site, south of Billy Wright Road. Further south of the solar project site is the Los Banos Reservoir and the 1,392-acre Wright Solar Park, which produces approximately 200 MW of power. In addition, the San Luis Reservoir State Recreation Area is located further west of the solar project site. The lands immediately east of I-5 support orchards, grazing, and dry farming, as well as the aqueducts of the Central Valley Project (CVP). Further east of the solar project site, irrigated agriculture is the primary land use. The City of Los Banos is located several miles to the east of the solar project site.

As noted above, the Billy Wright Landfill is adjacent to the solar project site's southern boundary. Billy Wright Landfill is owned and operated by the Merced County Regional Waste Authority (RWA). The RWA is responsible for solid waste coordination and disposal activities within the County, and operates one additional landfill in the County, in addition to the Billy Wright Landfill. Billy Wright Landfill has been in operation since 1983, and primarily serves the cities of Dos Palos, Gustine, and Los Banos, as well as the community of Santa Nella and unincorporated areas within the western portion of the County. The Billy Wright Landfill is permitted to receive 1,500 tons of waste per day. It has a remaining capacity of approximately 11,370,000 cubic yards, and is anticipated to reach its permitted capacity in 2054 (California Department of Resources, Recycling, and Recovery [CalRecycle] 2022.) In its response to the Notice of Preparation (NOP) for the proposed project (see Appendix 1-2), RWA indicated that it may in the future seek to expand the Billy Wright Landfill to the north.

RWA previously evaluated expansion of the Billy Wright Landfill by approximately 50 acres along the northern boundary of the landfill in 2006 in the *Solid Waste Disposal/Transfer Option for Western Merced County Draft Environmental Impact Report* (SCH# 2003101096) (County of Merced Solid Waste Management Department 2006). However, at the time of this SEIR, there are no approved expansion plans of the Billy Wright Landfill, nor has RWA formally proposed expansion of the landfill or conducted or initiated CEQA review beyond what was conducted for the EIR mentioned previously (SCH #2003101096).

As shown in Figure 3.11-1, three approved community plans for large mixed-use communities are in the vicinity of project site, including the *Villages at Laguna San Luis Community Plan*, *Fox Hills Community Plan*, and *Santa Nella Community Plan*.

The *Santa Nella Community Plan* area is located several miles north of the solar project site, beyond SR 152, and adjacent to O'Neill Forebay, on approximately 2,466 acres. The community plan, approved in 2000, allows for the development of 6,483 residential units; 2.16 million square feet of commercial space; 3.03 million square feet of light industrial space; 396,396 square feet of office commercial uses; expansion of an existing golf course; and school, and institutional uses (County 2000). While there are a limited number of existing urban land uses within the community plan area, including a golf course, mobile home park, a residential subdivision, and an elementary school, these existed prior to the establishment and approval of the community plan. At the time of this SEIR, while several tentative maps have been approved by the County, no development proposed in the community plan has been built.

The *Fox Hills Community Plan* area is located southeast of the solar project site. It is located on both sides of I-5, with the majority of the community plan area located east of I-5. Approved in 2006, the community plan allows for the development of a golf course, 3,460 residential units, a commercial area, and open space on 1,250 acres (County 2006). At the time of this SEIR, none of the development in the community plan has been built or proposed.

As mentioned, the solar project site is within the *Villages of Laguna at San Luis Community Plan* area. Approved in 2008, the plan allows the development of several villages with residential, mixed use, commercial, and schools focused around a village center on 6,200 acres. The allowable development includes approximately 15,895 residential units; 1.44 million square feet of retail commercial space; 2.85 million square feet of office, research and development, and light industrial space; elementary, middle, and high schools; and municipal utilities. Open space and parks are also included (County 2008). At the time of this SEIR, none of the development in the community plan has been built. Currently, the community plan area is vacant, with grazing and dry farming as its current use.

PG&E Substation

The PG&E Los Banos Electrical Substation is approximately 0.2 mile west of the solar project site and west of the residential subdivision and RV Park described above. The substation is on approximately 47 acres of land south of SR 152 and accessible via Jasper Sears Road (County 2007). The area within the existing fence line is occupied by existing substation equipment and mostly paved. The area outside the existing fence line within the substation property is vacant. Although the PG&E substation is designated as Urban Community under the General Plan, in association with the *Villages of Laguna San Luis Community Plan*, and zoned exclusive agriculture under the Merced County Zoning Code, PG&E is not subject to the land use regulations of surrounding local governments for uses on property owned or controlled by PG&E. Therefore, the consistency analysis regarding the PG&E substation, and associated project improvements, with such regulations is for informational purposes only.

Off-Site Mitigation Site

The off-site mitigation site is located 5 miles south of the solar project site in an area of approximately 1,498 acres of undeveloped grassland. The off-site mitigation site is located immediately south of the Los Banos Reservoir, and there are no existing residences or communities within the off-site mitigation site, or close to the site. The off-site mitigation site is designated as Foothill Pasture under the General Plan, and zoned exclusive agriculture under the zoning code.

The FMMP identified agricultural lands within the off-site mitigation site. As shown detailed in Section 3.2, *Agricultural Resources*, the off-site mitigation site includes approximately 1,390.65 acres of Grazing Land, and approximately 107.54 acres of Urban and Built-Up Land. None of the parcels that comprise the site are currently subject to Williamson Act contracts. However, the entire site overlaps with the Merced County Agricultural Preserve, which is described in more detail below in *Regulatory Setting*.

Off-Site Residential Redesignation Area

The off-site residential redesignation area covers approximately 202.8 acres (APNs 078-190-008, 078-190-027, and 078-190-028 and portions of APNs 078-190-011, 078-190-013, 078-200-006, and 078-200-088) within the Villages at Laguna San Luis Community Plan area, southwest and east of the Billy Wright Landfill (across Billy Wright Road). The off-site residential redesignation area is designated as low-density residential under the Community Plan and zoned as single-family residential in the county Zoning Code. As described on page 3-1 in Chapter 3 of the Community Plan EIR, and is incorporated by reference, the off-site residential redesignation area is primarily used for active and fallowed agricultural production (e.g., alfalfa, hay, oats, vineyards, orchards) and grazing land for cattle and sheep. Up to two single-family homes are located within the residential redesignation area along Billy Wright Road, southwest of the Billy Wright Landfill. This discussion accurately describes the current existing setting at the residential redesignation area.

Regulatory Setting

State

State Planning Law: General Plans and Community Plans

State law (California Government Code Section 65300 et seq.) requires each California municipality to prepare a general plan. A general plan is defined as a “comprehensive, long-term general plan for the physical development of the county or city, and any land outside its boundaries which in the planning agency’s judgement bears relation to it planning.” State requirements call for general plans that “comprise an integrated, internally consistent and compatible statement of policies for the adopting agency.” While allowing considerable flexibility, State planning laws do establish some requirements for the issues that general plans must address. The California Government Code establishes both the required content of general plans and rules for their adoption and subsequent amendment.

Article 8 of the Government Code (Section 65458) allows local planning agencies to prepare community plans for the systematic implementation of the general plan, for all or part of the area covered by the general plan. A community plan must meet the following requirements:

1. The plan was adopted by a city, including a charter city, or county for a defined geographic area within its jurisdictional boundaries.
2. The plan serves as the land use element, pursuant to subdivision (a) of Section 65302, for the area covered by the plan.
3. The plan has not been updated for more than 10 years before the operative date of this article.
4. The plan includes two or more transit priority areas, as defined in Section 21099 of the Public Resources Code.
5. The city or county that adopts the plan has adopted, on or after January 1, 2015, a circulation or mobility element as a part of the general plan.
6. The city or county that adopts the plan has a housing element that includes housing capacity to sufficiently accommodate regional housing needs projects as set forth in Section 65584.01.
7. The city or county that adopts the plan has adopted a vehicle miles traveled threshold of significance for the area covered by the plan in compliance with Section 15064.3 of Title 14 of the California Code of Regulations.
8. The area covered by the plan update is located within an urbanized area, as defined by Section 21071 of the Public Resources Code.
9. The city or county that adopts the plan has also adopted any required ordinances or regulations related to either the following:
 - a. The designation of very high fire hazard severity zones pursuant to Section 51179.
 - b. Flood plain management in accordance with the National Flood Insurance Program, pursuant to Part 60 (commencing with Section 60.1) of Subchapter B of Chapter I of Title 44 of the Code of Federal Regulations.
 - c. “Development Project” has the same meaning as defined in Section 65928.

- d. “Update” means a comprehensive amendment to a community plan that is intended to bring the community plan up to date with the most current land use policies and that includes amendments to both the plain text and plan land use map, as well as the adoption or amendment of any zoning ordinances necessary to bring zoning into consistency with the community plan.

In addition, the community plan must be consistent with the general plan and include a statement of the relationship of the community plan to the general plan.

Sustainable Communities and Climate Protection Act of 2008 (Chapter 728, Statutes of 2008)

The Sustainable Communities and Climate Protection Act of 2008, otherwise known as Senate Bill (SB) 375, requires the integration of land use, housing, and transportation planning to achieve regional greenhouse gas (GHG) emission reductions, adopted by the California Air Resources Board. SB 375 requires Metropolitan Planning Organizations to develop a Sustainable Communities Strategy (SCS)—a new element of the Regional Transportation Plan (RTP)—to plan for achieving these GHG reduction targets. The SCS must demonstrate the attainment of the regional GHG emission-reduction targets while accommodating the full projected population of the region. The SCS/RTP for Merced County is described below under *Regional Transportation Plan/ Sustainable Communities Strategy for Merced County*.

Senate Bill 743

SB 743, which was signed into law in 2013 and is codified in Section 21099 of the California Public Resources Code, intends to better align CEQA transportation impact analysis practices and mitigation outcomes with the State’s goals to reduce GHG emissions, encourage infill development, and improve public health through more active transportation. SB 743 is addressed in several locations in this SEIR, including 3.8, *Greenhouse Gas Emissions*, and 3.17, *Transportation*.

Local

Regional Transportation Plan/ Sustainable Communities Strategy for Merced County

The Merced County Association of Governments (MCAG) adopted the *Regional Transportation Plan (RTP)/ Sustainable Communities Strategy (SCS)* in August 2022 (MCAG 2022). The RTP/SCS is the integrated land use/transportation plan and demographic/economic forecast for Merced County. The plan coordinates housing plans, open space and farmland conservation efforts, economic development strategies, and transportation investments. One of the main goals of the RTP/SCS is to reduce GHG emissions from cars and light-duty trucks through the year 2046 to meet state goals under SB 375. As described above, under SB 375, Metropolitan Planning Organizations such as MCAG must develop an SCS as part of the RTP. The joint RTP/SCS functions as both the SCS and the RTP for the region.

2030 Merced County General Plan

The *2030 Merced County General Plan*, which was adopted in December 2013, guides the physical development and character of the county (County 2013). It sets out the pattern of future land use within the unincorporated areas including, among other things, agricultural lands, areas of existing communities, and areas of future planned communities. The County values its agricultural land. This is reflected in the goals and policies of the general plan that are protective of agriculture’s important

physical and economic presence in the county. The General Plan has a long-range vision, supported by a spectrum of strategies and policies to deal with changing priorities and development pressures that the County will face through the coming years.

The Housing Element of the General Plan has a separate planning horizon for the 2016-2024 planning period and was adopted by County Board of Supervisors on July 12, 2016. The Housing Element is an implementation mechanism of the County's General Plan and provides goals, policies, and programs to meet the housing requirements mandated by the State of California Department of Housing and Community Development.

General Plan—Land Use Designations. The Land Use Diagram in the General Plan depicts the land use pattern for future development in the county. The General Plan defines the land use classifications that are applied in the county. Each land use classification includes the allowed uses and the associated density and intensity standards. The boundaries of the land use designations on the Land Use Diagram are depicted generally on Figure 3.11-2. As shown on this figure, the solar project site is currently designated as Urban Community (approximately 1,180 acres) and Agricultural (561 acres) land uses.

The Urban Community land use designation is intended for unincorporated areas that have a range of housing densities, commercial uses, public infrastructure, services, and employment-generating land uses. The Urban Community designation accommodates all classifications of urban land use, and all land within an Urban Community is planned for eventual development in a mixture of urban and urban-related uses. The County has prepared or will prepare community plans for each Urban Community. The community plans serve as a bridge between the countywide goals, policies, and implementation programs in the General Plan and the specific needs of each unincorporated community. The Urban Community designation on the solar project site is associated with the *Villages of Laguna San Luis Community Plan* (County 2008), which is discussed in more detail below.

The Agricultural and Foothill Pasture land use designations apply to the majority of the land within Merced County. The land use designation acknowledges the importance of agriculture in the county, and seeks ways to protect productive agricultural land, promote agricultural processing and support operations, recognize and preserve valuable open space resources, and allow for the development of energy production facilities in rural parts of the county. The Agricultural designation on the solar project site is associated with the portion of the site that is outside the Community Plan.

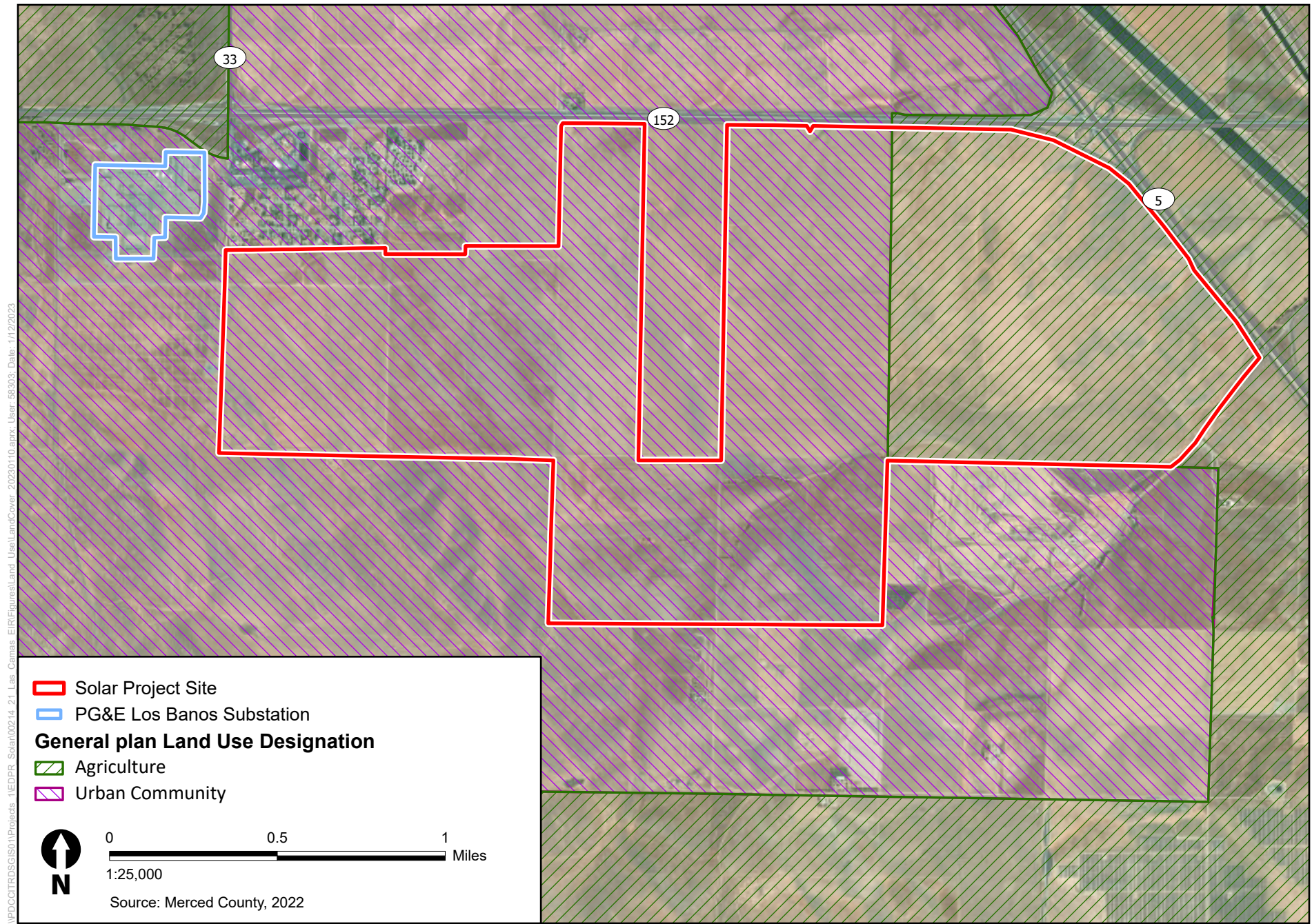
General Plan—Goals and Policies. The General Plan contains goals and policies related to Economic Development, Land Use and Community Character, Agriculture, Transportation and Circulation, Housing, Public Facilities and Services, Natural Resources, Recreation and Cultural Resources, Health and Safety, Air Quality, and Water. Applicable land use goals and policies from these elements and chapters are discussed in the impact analysis, below. Table 3.11-3, presented later in this section, analyzes the project's consistency with applicable General Plan goals and policies that have been adopted to avoid or mitigate an environmental impact, and describes the environmental effects or potential incompatibilities with the project. In addition, although General Plan policy consistency determinations are made in this chapter, the applicable General Plan policies are also provided in the relevant sections of this SEIR.

Villages of Laguna San Luis Community Plan

The *Villages of Laguna San Luis Community Plan* was adopted in September 2008, and provides a long-range growth and development plan for approximately 6,200 acres located west of I-5 along SR 152 and SR 33 in western Merced County (County 2008). The community plan includes policies and guidance for

the establishment of a new community that can accommodate growth and market demands, all while ensuring adequate public services and facilities, and compatibility with the surrounding environment. The community plan includes the following policies that are applicable to land use:

- **Goal 3.0:** Develop a community that is responsive to its natural setting and that promotes conservation of water and non-renewable resources, and minimizes pollutant emissions.
 - **Policy 3.A.2:** Minimize traffic external to the community (i.e., commuter traffic) through an appropriate distribution of jobs, housing types, and shopping opportunities.
 - **Policy 3.B.2:** Development on hillsides shall be responsive to visual and safety considerations.
- **Goal 4.0:** Placement and design of structures that minimize land use conflicts.
 - **Policy 4.A.1:** Reduce visual and noise impacts of commercial and industrial uses on adjacent residential properties and neighborhoods by incorporating grading, landscaping, and other design treatments to screen parking, refuse storage, utility and other activity areas.
 - **Policy 4.A.2:** Minimize light and glare impacts upon development while maintaining adequate health and safety standards.
 - **Policy 4.A.4:** Ensure access to and minimize hazards from utility pipelines which traverse the community through utilization as components of the open space trail and circulation systems.
 - **Policy 4.A.5:** Establish means to minimize conflicts between residential and neighborhoods and the Billy Wright Road Landfill.
 - **Policy 4.A.6:** Avoid incompatibility conflicts with the major PG&E substation and adjacent land uses.
 - **Policy 4.B.1:** Minimize hazards to development from wildland fires on adjacent lands though compliance with the California Division of Forestry State Responsibility Area (SRA) Fire Safe Regulations (Title 14, Chapter Articles 1-5).
 - **Policy 4.B.2:** Minimize conflicts between development and agricultural operations through the use of buffer areas or larger lots along the edge of the CP.
 - **Policy 4.E.1:** Residential and other noise sensitive land uses shall not be located in areas exposed to current or projected noise levels that exceed 65 dBA L_{dn} , or other community noise standards established in the General Plan Noise Chapter.
 - **Policy 4.E.2:** Measures to buffer or screen noise sources are designed in an efficient and visually responsible manner.
 - **Policy 1.E.1:** Provide a minimum 50 foot landscaped corridor along both sides of the State Scenic Highway 152.
 - **Policy 1.E.3:** Locate noise tolerant land uses closest to the Scenic Highway to reduce the need for sound walls.
 - **Policy 1.G.1:** Conserve prominent natural drainageways and design stormwater conveyance and detention components to emulate natural landforms.
 - **Policy 1.G.5:** Preserve existing Kit Fox migration corridors adjacent to Jasper Sears Road, the California Aqueduct, Interstate I-5, and along designated utility corridors.



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Figure 3.11-2
General Plan Land Use Designations on the Project Site

Community Plan—Land Use Designations. The land use diagram in the Community Plan depicts the land use pattern for future development within the *Villages of Laguna San Luis Community Plan* area. The Community Plan provides for residential, commercial/industrial, open space, and public facility land uses in accordance with the County General Plan. Some of the land use designations under the Community Plan are more symbolic in representing a need for a certain facility or amenity within the neighborhood of phase of development (i.e., Neighborhood Parks, Elementary Schools, and Fire Stations). As depicted on Figure 3.11-3, the land use designations associated with the *Villages of Laguna San Luis Community Plan* applicable to the project site are discussed below. In addition to the below designations, approximately 83 acres of land within the Community Plan are undesignated and are comprised of roadways.

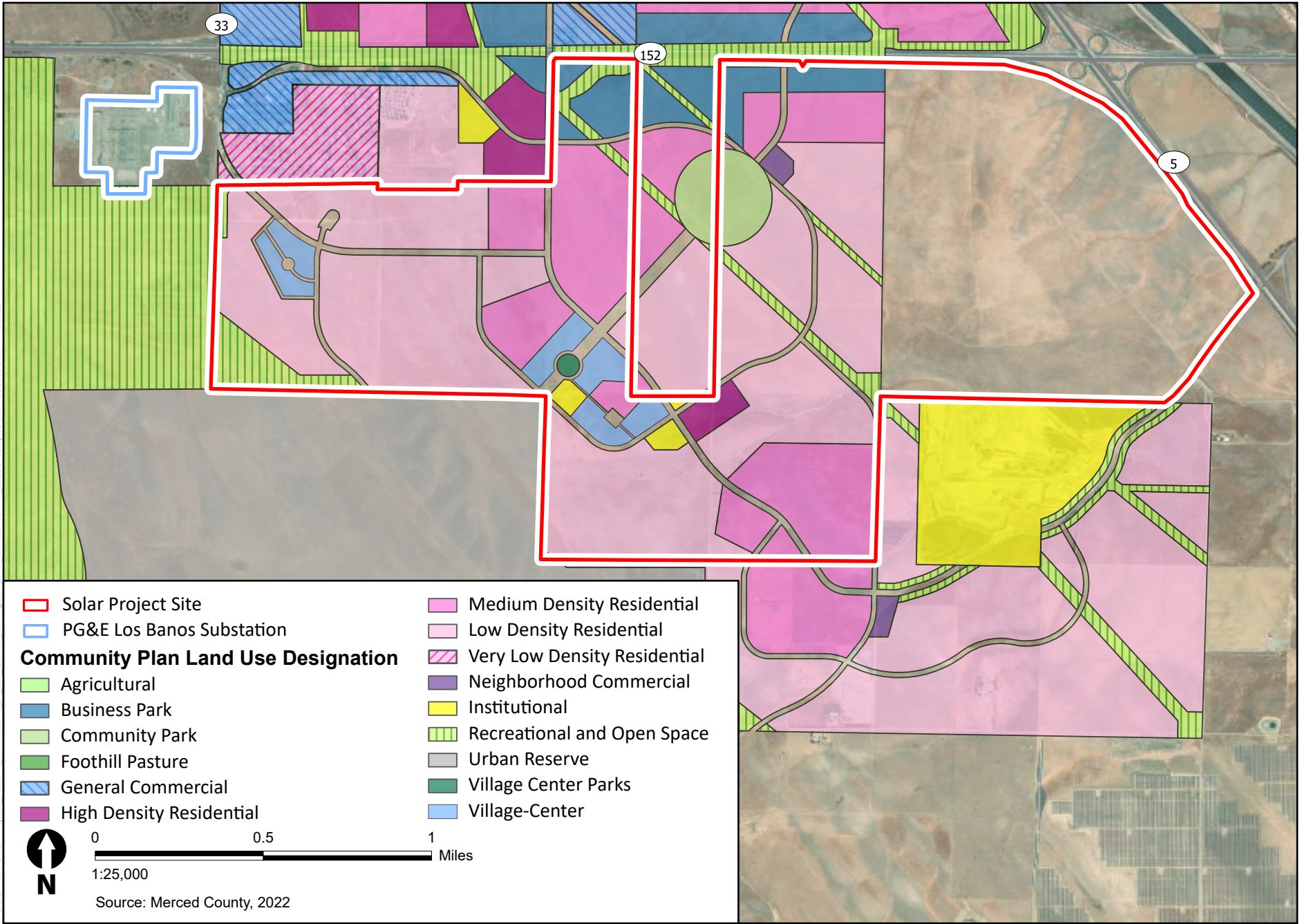
- *Low Density Residential (LD)*—approximately 611 acres of the solar project site is designated as LD. The LD land use designation is intended to accommodate traditional smaller-lot tract home developments. However, duplexes may be permitted if the overall density threshold is not exceeded. The LD designation has a density threshold of 2 to 8 dwelling units per gross acre.
- *Medium Density Residential (MD)*—approximately 257 acres of the solar project site is designated as MD. The MD land use designation is intended to accommodate single-family residences on approximately 2,500 to 5,000 sf lots and multi-family residences in the form of duplexes, rowhouses, or apartment and condominium complexes with up to 15 dwelling units per acre. The MD designation has a density threshold of 8 to 15 dwelling units per gross acre.
- *High Density Residential (HD)*—approximately 12 acres of the solar project site is designated as HD. The HD land use designation is for the highest density projects within the community plan area, and consisting of multiple story apartments or condominiums with up to 33 dwelling units per acre. The HD designation has a density threshold of 15 to 33 dwelling units per gross acre.
- *Community Park (CP)*—approximately 24 acres of the solar project site is designated as CP. The community plan designates two areas within the community plan as CP—one CP land use designation is located north of SR 152, and one is located south of SR 152. The proposed project is associated with the southern CP designation, which is located along a major stormwater drainage way.
- *Neighborhood Commercial (NC)*—approximately 5 acres of the solar project site is designated as NC. The NC land use designation is intended to provide convenience retail and commercial service needs for nearby neighborhoods which are not located within 0.5 mile of the Village Center commercial areas, and should serve to establish neighborhood identity and local design themes. The NC designation ranges from 4 to 12 acres in size, and contains uses such as food markets, dry cleaners, hair salons, drug stores, auto service stations, video stores and small restaurants or food service.
- *Village Center (VC)*—approximately 49 acres of the solar project site is designated as VC. The VC designation is used an interim designation for the three mixed-use community oriented commercial centers included within the community plan. While the community plan identifies a conceptual land use plan associated with this designation, a more specific development plan would be established through the community plan’s implementation plan process, which would include a combination of retail office, institutional, and park land uses.

- *Institutional (I)*—approximately 11 acres of the solar project site is designated as I. The I land use designation permits the development and operation of utility-oriented uses needed to serve development within the community plan area and surrounding areas. These uses could include an electrical substation, water and wastewater treatment facilities, solid waste disposal and recycling facility center, and a transit center.
- *Business Park (BP)*—approximately 55 acres of the solar project site is designated as BP. The BP designation is associated with areas within the community plan that are accessible from major transportation routes, and are within the vicinity of the village centers. The BP land use designation would allow for a mix of non-residential land uses including light manufacturing, professional office, research and development facilities, warehouse and distribution centers, indoor fabrication and other similar uses. Employee-serving retail and/or other service uses may be allowed under the BP designation. This land use designation is intended for low intensity uses accompanied by a landscaped setting with high design standards.
- *Open Space (OS)*—approximately 70 acres of the solar project site is designated as OS. The OS designation applies to land within the community plan area that contain opportunities for biological conservation, reflect the county’s agricultural heritage, provide recreational opportunities, promote general public education, contain an important scenic or utility value, or provide open space linkages throughout the community. Open space uses may include, but not be limited to, community trails, picnic areas, biotic gardens, utilities, habitat enhancement, drainage and flood control facilities, and other public uses that are compatible with the natural amenities of these lands.
- *Urban Reserve (UR)*—approximately 1 acre of the solar project site is designated as UR. The UR land use designation applies to areas within the community plan that are considered appropriate for intensive urban land use activities at a future date, such as infill development. Future uses within the UR designation must be consistent with the community plan, and generally consistent with General Plan policies which require an assessment of service availability and review of existing community vacant land availability.
- *Village Center Parks (VCP)*—approximately 2 acres of the solar project site is designated as VCP. The VCP designation is associated with the village center land use designation. Each of the designated village center land uses within the community plan area shall contain a public park (i.e., the VCP designation), which would function similar to a town square.

Merced County Zoning Code

The County Zoning Code identifies allowed land uses and mandatory standards for development within specific land use zones, including the *Villages at Laguna San Luis Community Plan*. It differs from the general plan in that zoning establishes enforceable development standards while the general plan identifies future land use patterns. Zoning implements the land use policies described in the general plan and community plans. As detailed in Chapter 2, *Project Description*, and depicted in Figure 3.11-4, the solar project site is comprised of the following zoning designations:

- *Single-Family Residential, 5,000 Feet (R-1-5000)*—approximately 715 acres of the solar project site is zoned as R-1-5000. This zone provides a full range of urban services and reserve appropriately located areas similar to the R-1 zoning designation for single-family living at slightly higher population densities consistent with sound standards of public



**Figure 3.11-3
Community Plan Land Use Designations on the Project Site**

\\PDC\CTRD\GIS\1\Projects_1\EDPR_Solar\0214_21_Las_Camas_EIR\Figures\Land_Use\LandCover_20230110.aprx:User: 68303; Date: 1/12/2023

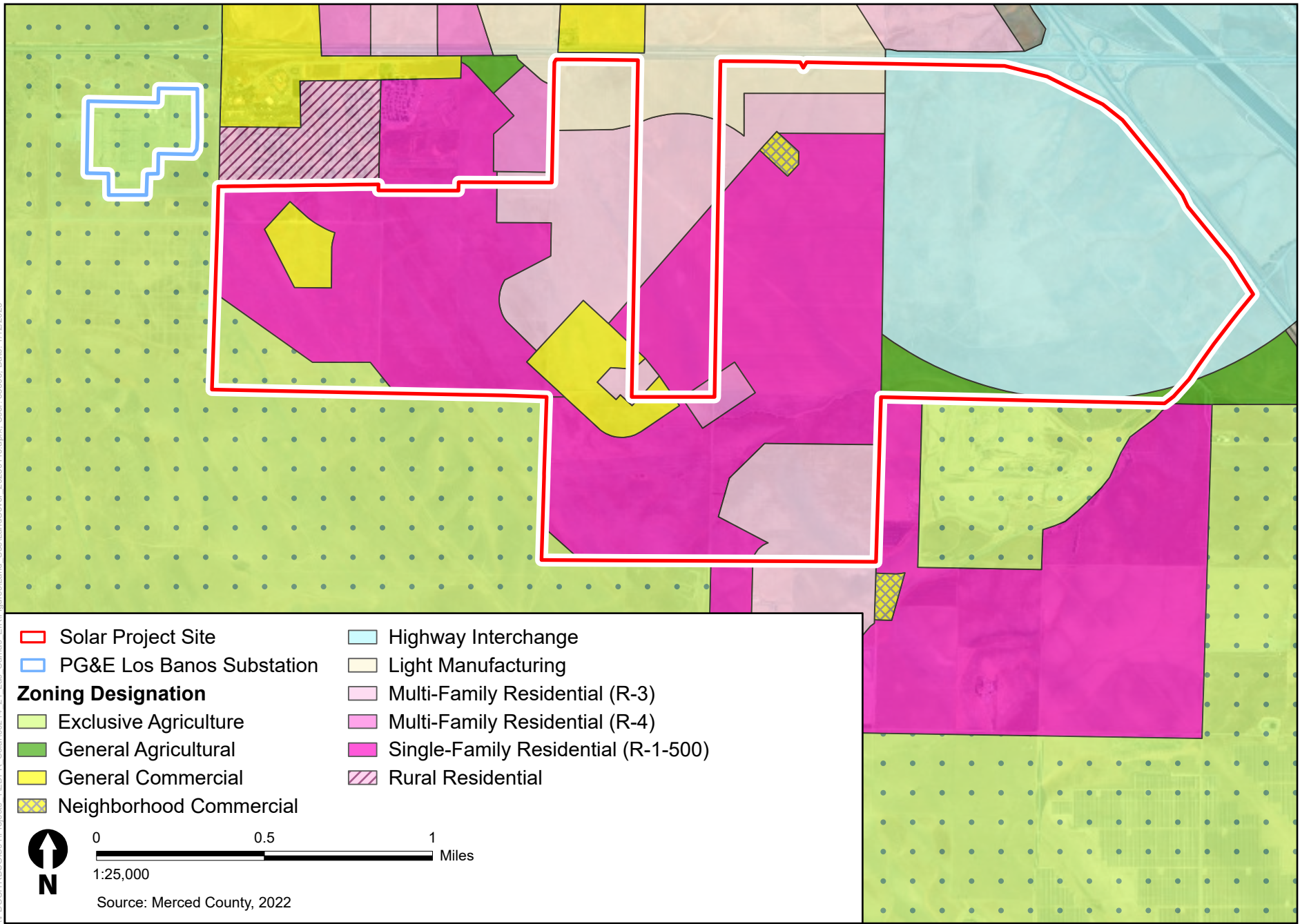


Figure 3.11-4
Zoning Designations on the Project Site

health, welfare, and safety. This zone implements the Medium Density Residential (MDR) in the community plans and implements the Low Density Residential (LDR) land use designation in the General Plan. Building heights under the R-1-5000 designation may reach up to 30 feet.

- *Multi-Family (R-3)*—approximately 259 acres of the solar project site is zoned as R-3. The purpose of the R-3 zoning designation is to provide areas for residential neighborhoods consistent with the Medium-Density standards of the General Plan (typically up to 15 dwelling units per gross acre) and with a full range of urban services. Under, the R-3 zoning designation dwelling types may include grouped or clustered multi-family dwellings (i.e., duplexes, triplexes, townhouses, apartments), and other multi-family attached dwelling units (i.e., condominiums). This zone implements the MDR land use designation. Building heights under the R-3 designation may reach up to 60 feet.
- *Multi-Family (R-4)*—approximately 11 acres of the solar project site is zoned as R-4. The purpose of the R-4 zoning designation is to provide areas for residential development consistent with the High-Density standards of the General Plan (typically up to 33 dwelling units per gross acre), and with a range of urban services. Dwelling types may include grouped or clustered multi-family dwellings (i.e., duplexes, triplexes, townhouses, apartments), and other multi-family attached dwelling units (i.e., condominiums). The R-4 zoning designation implements the HD land use designation. Building heights under the R-4 designation may reach up to 60 feet.
- *General Commercial (C-2)*—approximately 72 acres of the solar project site is zoned as C-2. The purpose of the C-2 zoning designation is to provide areas for a wide variety of retail stores, entertainment establishments, offices, and service businesses that serve unincorporated urban communities or regional markets. The zone is generally located in the central business districts or along major transportation routes, and implements the General Commercial (GC) land use designation. Building heights under the C-2 designation may reach up to 75 feet.
- *Light Manufacturing (M-1)*—approximately 67 acres of the solar project site is zoned as M-1. The M-1 zoning designation provides for warehousing, assembling, manufacturing, wholesaling, research and development facilities, commercial offices, and limited accessory retail sales. Uses within this zoning designation include assembly of previously manufactured materials and have low nuisance characteristics, and are compatible with surrounding uses. The M-1 designation implements the Industrial (I) land use designation. This designation would also include a Community Plan–implemented business park mixed-use non-residential zone. Building heights under the M-1 designation may reach up to 75 feet.
- *Exclusive Agricultural (A-2)*—approximately 51 acres of the solar project site is zoned as A-2. This zone is applied where agriculture is the primary use of the property. The A-2 zone allows one single-family residence per parcel of land, as well as agricultural production, a ranch office, and accessory buildings. A solar farm of the type being proposed may be allowed upon approval of a conditional use permit by the County. The A-2 designation implements the Agriculture (A), Agriculture Residential (AR), Foothill Pasture (FP), and Urban Reserve (UR) land use designations.
- *Neighborhood Commercial (C-1)*—approximately 5 acres of the solar project site is zoned as C-1. The C-1 zoning designation is intended to provide small-scale, day-to-day convenience shopping and services for residents of nearby neighborhoods. This zone is typically located at the edges of residential neighborhoods or where collector and/or arterial roads intersect. The C-1 designation implements the Neighborhood Commercial (NC) and GC land use designations. Building heights under the C-1 designation may reach up to 35 feet.

- *General Agricultural (A-1)*—approximately 28 acres of the solar project site is zoned as A-1. The A-1 zoning designation provides intensive farming operations dependent on higher quality soils, water availability, relatively flat topography, and agricultural commercial and/or industrial uses dependent on proximity to urban areas or location in sparsely populated low traffic areas. Under this designation, parcels smaller than 40 acres down to a minimum of 20 acres may be approved where consistent with surround parcel sizes. The H-I-C designation implements the A, AR, and UR land use designations.
- *Highway Interchange Center (H-I-C)*—approximately 533 acres of the solar project site is zoned as H-I-C. The H-I-C zoning designation is intended to provide areas for travel-serving commercial uses located adjacent to highway interchanges. Typical uses in this zone include restaurants, banks, hotels/motels, service stations, and truck stops. The H-I-C designation implements the General Commercial (GC) land use designation. Building heights under the H-I-C designation may reach up to 60 feet.

Merced County Agricultural Preserve

Merced County established agricultural preserves for areas within the county that are used for agricultural and open space uses per the Williamson Act.¹ The primary objective of the preserve is to protect agricultural lands within the County for continued agricultural production, and to preserve open space uses. Establishment of the agricultural preserve is a prerequisite for landowners to enter into a land conservation contract with the County. The County has established that lands zoned as either General Agricultural (A-1), (A-1-40) or Exclusive Agricultural (A-2), and are consistent with the rural land use designations of the General plan may be a part of the agricultural preserve (Merced County 2015). As described above, all of the off-site mitigation site is within the agricultural preserve. None of the land within the solar project site, PG&E substation, or off-site residential redesignation area are within the agricultural preserve.²

3.11.2 Environmental Impacts

This section describes the proposed project’s potential impacts on land use and planning. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

Methods for Analysis

CEQA requires that an EIR consider whether a proposed project may conflict with any applicable land use plan, policy, or regulation that was adopted for the purpose of avoiding or mitigating an environmental impact. This environmental determination differs from the larger policy determination of whether a proposed project is consistent with a jurisdiction’s general plan. The former determination (that is intended for consideration in a CEQA document) is based on, and limited to, a review and analysis of environmental effects. The latter determination, by comparison, is made by the decision-making body of the jurisdiction and is based on the jurisdiction’s broad

¹ The Williamson Act protects farmland from conversion to other uses by offering owners of agricultural land a property tax incentive to maintain their land in agricultural use.

² Pursuant to Agricultural Preserve Withdrawal Amendment APA07-001, approved by the Merced County Board of Supervisors on September 2, 2008, which removed the agricultural preserve designation from all lands within the Villages of Laguna San Luis Community Plan area.

discretion to assess whether a proposed project would conform to the policies and objectives of its general plan/community plan as a whole. In addition, the broader general plan consistency determination takes into account all evidence in the record concerning the project characteristics, its desirability, as well as its economic, social, and other non-environmental effects.

Conflicts of a project with land use policies do not, in and of themselves, constitute significant environmental impacts. Policy conflicts are considered environmental impacts only when the policies themselves were adopted for the purpose of avoiding or mitigating an environmental effect. Such conflicts constitute significant environmental impacts only when the resulting direct environmental effects are significant. Decision-makers will need to consider the consistency of the proposed project with applicable plans and policies that do not directly relate to physical environmental issues when determining whether to approve or deny the project.

The project's effects are compared to the thresholds of significance to determine whether the project would result in a significant change in the resource or regulation represented by the threshold. The project's impact on land use is based on the long-term conversion of approximately 1,741 acres of undeveloped land to a solar park, improvements related to the PG&E Los Banos Substation, and the establishment of an off-site mitigation site and off-site residential redesignation.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

Would the project:

- Physically divide an established community?
- 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?
- Conflict with any applicable habitat conservation plan or natural community conservation plan?

Impacts Not Evaluated in Detail

Conflict with any applicable habitat conservation plan or natural community conservation plan. There is no adopted habitat conservation plan or natural community conservation plan that is currently applicable to the project site. As part of its compliance with ESA, the project applicant is seeking to obtain an incidental take permit from USFWS. The incidental take permit is discussed in Section 3.4, *Biological Resources*. An HCP is being prepared for the project as part of the incidental take permit process.

The off-site mitigation site associated with the project is expected to be placed under a conservation easement in accordance with the HCP. There will be no conflict between the HCP and this required off-site mitigation. The incidental take permit would not be issued unless the HCP satisfies the requirements of USFWS. Therefore, because the off-site residential redesignation area is a component of the overall project, and there are no other applicable HCPs or NCCPs, the project would result in **no impact** related to HCPs or NCCPs, and this impact is not evaluated further.

Impacts and Mitigation Measures

Impact LU-1: Physically divide an established community? (*No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.*)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts related to the disruption or division of an established community that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.1-1 on page 5.1-11 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that development under the Community Plan would result in the development of new urban land uses that would expand outward from existing urban development located at the intersection of SR 33/152. However, because these existing urban land uses would remain and be incorporated into the Community Plan area, no existing communities would be disrupted or divided as a result of development under the Community Plan. Therefore, this impact was found to be less than significant.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a *Utility-Scale Solar Overlay*. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

As described in Chapter 2, *Project Description*, the project's proposed amendment would redistribute the housing that was planned under the community plan, thereby preserving the overall supply of residential units that could be developed during the life span of the solar project (i.e., 35 years); in other words, the proposed off-site General Plan amendment would maintain the County's overall capacity for developing new high-density/medium-density housing.³ However, it is important to note that the proposed project itself does not include the construction of new housing or any other type of physical development as part of the off-site General Plan amendment. Therefore, the off-site residential redesignation area would not result in direct impacts related to the physical disruption of an established community. In addition, future development under the amendment would be subject to the Community Plan, which requires approval of implementation plans for each specific area identified under the plan. Implementation plan approval by the County

³ Table 5A-2 in the County's Housing Element designates high-density residential uses in the Community Plan as Lower Income and medium-density residential uses as Moderate Income.

is a discretionary action, and supplemental environmental review, including any identified mitigation measures related to land use would be required for approval of the implementation plan (see page 1-3 of the Community Plan EIR) (County 2007). Therefore, the proposed off-site residential redesignation would have a less-than-significant impact on the physical disruption of an established community for the same reasons stated in the Community Plan EIR, and as summarized above. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction, Operation, and Decommissioning

Physically disrupting or dividing an established community generally refers to construction of a physical feature or removal of a means of access that impairs mobility within an existing community or between a community and outlying areas. There are no established residential communities on the solar project site, which is currently occupied by undeveloped, non-native grassland, a riverine feature, and three 230-kV transmission lines and a 69-kV transmission line. Existing single-family residences and an RV Park are located directly north of the site, and the residences are spread out across larger lots. However, because these homes are somewhat isolated and share Gonzaga Road and San Luis Drive off of SR 152 as a common access, they give the appearance of a small community. All of the existing homes are north of the solar project site, however, and neither the solar project's installation nor its operation would physically divide them from one another.

As discussed above, the County has approved three large community plans (Santa Nella, Fox Hills, and Villages of Laguna San Luis) in the project vicinity. The Santa Nella Community is located north of the solar project site, beyond SR 152, and the Fox Hills Community is located southeast of the solar project site beyond Billy Wright Road and adjacent to I-5. At the time of this SEIR, no development under either of the community plans has been built out or has a pending application, and the solar project site is outside of these planned communities. However, as discussed above, a substantial portion of the solar project site does fall within the Villages at Laguna San Luis Community.

While the solar project site is generally designated, and zoned for, residential, commercial, industrial, agricultural, and open space uses under the *Villages at Laguna San Luis Community Plan*, there are no existing uses located within the solar project site. In addition, the solar project would not block any existing roads, or sever connections between existing properties. Thus, the solar project site would not physically divide or disrupt an established community and would not reduce existing access for adjacent properties. Impacts would be less than significant, consistent with the Community Plan EIR conclusion. Therefore, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Although the solar facility would not result in the division of an existing community, it would affect the buildout of the planned community or any development proposed under the Community Plan at the solar project site location. At the solar project site, the solar facility would, during its lifespan, preclude the development of the proposed uses planned for under the Community Plan, which includes business, agricultural, community amenities, commercial, residential (low, medium, and high density), institutional, village center, and recreational and open space uses, including associated utility and roadway infrastructure and improvements. While the solar facility would result in the division of a planned community, it would not be permanent. The proposed solar facility would have a lifespan of 35 years, at the end of which, the project would be decommissioned

and site reclamation would begin immediately. During this time, the solar project facilities would be decommissioned and removed, and the solar project site would be restored to pre-construction conditions. Once site reclamation is completed, the existing zoning and land use designations established under the Community Plan would be restored. With removal of the solar facility, the proposed development under the Community Plan could occur as planned. Impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site outside of the Community Plan is approximately 561 acres and is designated in the County general plan as Agricultural. Development of this land was not considered in the Community Plan EIR. The proposed project includes a General Plan amendment and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay. Because this land and the land around it, including land within the Community Plan, is currently undeveloped, the proposed solar development on this portion of the site would not result in a significant impact. Impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Off-Site Mitigation Site

The project would establish an off-site mitigation site in area of approximately 1,498 acres of existing grassland 5 miles south of the solar project site, immediately south of the Los Banos reservoir. No new land uses would be constructed on the off-site mitigation site; rather, the site would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other species, as necessary. Targeted invasive plant management activities would be necessary to prevent invasion by pest plant species. There are no existing residences or communities on the off-site mitigation site or surrounding areas. Therefore, establishment of the off-site mitigation site, including maintenance of the existing perimeter fence, would not divide an established community. Impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The existing PG&E Los Banos Substation is located approximately 0.2 mile west of the solar project site, and west of the existing residences and RV Park. The substation is accessible from Jasper Sears Road. The proposed project includes transmission system improvements to the substation to connect it to the solar project and facilitate the delivery of power from the solar project. As part of the project, the existing substation fence would be moved outward to the south and east, on existing substation property, to accommodate the additional equipment required to support the new solar facility. The area within the modified fence would encompass an additional approximately 450,000 square feet (10.3 acres) of existing PG&E-owned substation property. Outside the fenced area, but also on PG&E-owned substation property, other utility infrastructure, including but not limited to,

communication cables or conduit, would be constructed. In addition, up to approximately 10 structures would be installed on substation property to support a new, 230 kV transmission line connecting the substation facilities to the adjacent solar project. These improvements would not block any existing roads, or sever connections between existing or planned properties, and would occur within the existing substation footprint and PG&E-owned substation property. Impacts would be less than significant, consistent with the Community Plan EIR conclusion. Therefore, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

The impact of the whole project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, would be less than significant, consistent with the Community Plan EIR conclusion, because none of the project components individually or taken together would physically divide an established community, given the project's location and existing development. Therefore, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact LU-2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? (With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts related to land use conflicts within or adjacent to the Community Plan area that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.1-2 on page 5.1-11 through 5.1-19 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that development under the Community Plan would result in the development of new urban land uses that could conflict with existing land uses, specifically planned uses that would occur adjacent to Billy Wright Landfill and surrounding agricultural and open space areas, due to the lack of setbacks or buffers between these uses. The Community Plan EIR found that this would be a potentially significant impact but that with implementation of Community Plan EIR Mitigation Measures 5.1-2a (Billy Wright Landfill) and 5.1-2b (Agricultural and Open Space Areas), sufficient setbacks/buffers would be implemented to minimize potential land use conflicts with the Billy Wright Landfill and surrounding agricultural areas, and the impact would be less than significant.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

As described in Chapter 2, *Project Description*, the project's proposed amendment would redistribute the housing that was planned under the community plan, thereby preserving the overall supply of residential units that could be developed during the life span of the solar project (i.e., 35 years); in other words, the proposed off-site General Plan amendment would maintain the County's overall capacity for developing new high-density/medium-density housing. As shown in Tables 3.11-1 and 3.11-2, there is more than enough acreage within the off-site residential redesignation to

Table 3.11-1, Existing Medium-Density/High-Density Residential Development Capacity within Solar Project Site

Comm. Plan Designation	Acres within Solar Project Site ¹	Avg Units/Acre as Specified in the Community Plan ²	Total Units of Capacity
Medium Density (MD)	257	8	2,056
High Density (HD)	12	18	216
Total Units to Offset			2,272

¹ Per Table 2-1 in Chapter 2, *Project Description*, in Las Camas Draft EIR.

² Per Table 3-1 in Chapter 3, *Project Description*, in Villages of Laguna San Luis DEIR.

Table 3.11-2, Proposed Medium-Density/High-Density Residential Development Capacity within Residential Redesignation Area

Comm. Plan Designation	Acres within Residential Redesignation Area	Avg Units/Acre as Specified in the Community Plan	Total Units of Capacity
High Density (HD)	202.8	18	3,650.4

accommodate the additional medium/high-density housing needed to off-set the development of the solar project. Therefore, the off-site residential redesignation would allow the County to maintain housing (i.e., medium-density/high-density) residential development capacity and meet its Regional Housing Needs Assessment (RHNA) allocation in accordance with the County Housing Element and State law (see Section 3.14, *Population and Housing*, of this EIR, for further discussion).

It is important to note that the proposed project itself does not include the construction of new housing or any other type of physical development as part of the off-site General Plan amendment. Therefore, the off-site residential redesignation area would not result in direct impacts related to land use conflicts. Nonetheless, future development under the off-site General Plan amendment could occur, resulting in potential land use conflicts with the Billy Wright Landfill and adjacent surrounding agricultural and open space uses. As required by the Community Plan, any future development under the amendment would require implementation plan approval for each specific area of identified within the Community Plan. Implementation plans must not only be consistent with the Community Plan, but also include specific implementation measures identified in the Community Plan. Implementation plan approval by the County is a discretionary action, and as explained in the Community Plan, supplemental environmental review will be required for approval of the implementation plans (refer to Community Plan EIR Table 5-02). Specifically, page 1-3 of the Community Plan EIR states, “no development may occur until such time as additional environmental review has been completed for each implementation plan in accordance with CEQA” (County of Merced 2007). Future development within the off-site residential redesignation area, should it occur, would be subject to this requirement, including any identified mitigation measures related to land use or mitigating an environmental effect identified as part of the CEQA review process. Further, future development under the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR, such as Mitigation Measures 5.1-2a (Billy Wright Landfill) and 5.1-2b (Agricultural and Open Space Areas). Therefore, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Solar Facility Consistency with the General Plan, Community Plan, Zoning Code, and RTP/SCS

Land Use and Zoning Designations. As shown above in Figure 3.11-2 and Figure 3.11-3, the portion of the solar project site within the Community Plan boundary is currently designated for Low Density Residential (LD), Medium Density Residential (MD), High Density Residential (HD), Community Park (CP), Neighborhood Commercial (NC), Village Center (VC), Institutional (I), Business Park (BP), Open Space (OS), Urban Reserve (UR), and Village Center Parks (VCP) under the *Villages of Laguna San Luis community plan*. Correspondingly, and as shown in Figure 3.11-4, the portion of the solar project site within the Community Plan boundary is designated as single-family residential 5,000 feet (R-1-5000), multi-family (R-3), multi-family (R-4), general commercial (C-2), light manufacturing (M-1), exclusive agricultural (A-2), neighborhood commercial (C-1), under the County's zoning code.

As described in Chapter 2, *Project Description*, the solar project would include development of the Las Camas solar facility on approximately 1,741 acres of privately owned land and construction of a 230 kV transmission line to connect the solar project to the PG&E substation. Therefore, the solar project would not be consistent with existing land use designations under the Community Plan and General Plan as well as zoning designations under the County's zoning code. The inconsistency with land use and zoning designations does not, by itself, constitute a significant impact because the land use and zoning designations were not enacted to mitigate or lessen environmental effects as a primary objective.

To accommodate the solar facility development, the proposed project would require an amendment to the County General Plan and Community Plan to create a Utility-Scale Solar Overlay and an associated Cone Change covering the solar project site that allows for the following as conditional uses:

- Energy Generation Facilities (off-site energy uses) as currently allowed by Conditional Use Permits in all agricultural zones;
- Communication Equipment, Electrical Distribution/Transmission, Substation as currently allowed by Conditional Use Permits in all agricultural zones;
- Public Utility Facilities as currently allowed by Conditional Use Permits in Rural Residential zones; and
- Additional ancillary buildings, fencing, roads, and equipment.

The proposed General Plan Amendment, including the conditional uses described above, would ensure compliance with the General Plan and Community Plan, and meet the intent of the land use policies, as described in detail below and in Tables 3.11-3 and 3.11-4, presented later in this section.

Goals and Policies. Tables 3.11-3 and 3.11-4, presented later in this section, outlines the General Plan and Community Plan goals and policies, respectively, that have been identified as (1) applicable to the project and (2) adopted for the purpose of avoiding or mitigating an environmental effect, then describes environmental effects and potential incompatibilities. In Tables 3.11-3 and 3.11-4, a determination of "Consistent" or "Inconsistent" has been provided for each policy. The determination of whether the project would conflict with applicable policies is based on the environmental analysis provided in the applicable resource sections of this SEIR.

The project is generally consistent with the *2030 Merced County General Plan's* and the *Villages of Laguna San Luis Community Plan* policies. Both documents contain provisions for the siting of renewable energy facilities in the county's agricultural areas. One potential policy inconsistency was identified with Policy HS-7.12: New Project Noise Mitigation Requirements. The inconsistency is related to noise generated by the solar project where the project would abut land zoned for

residential uses (but not developed with residential uses), in anticipation of future development. Because implementation of the Community Plan requires the approval of Implementation Plans, as described in Chapter 5 of the Community Plan, prior to approval of any development or subdivision, and because such plans have not been proposed or approved, it is speculative to predict if or when properties with residential uses will be developed. CEQA prohibits lead agencies from basing the identification of impacts on speculation. Therefore, although this represents a policy consistency matter for County consideration, it is not an environmental impact under CEQA. The solar project would not be required to comply with Community Plan EIR Mitigation Measures 5.1-2a and 5.1-2b, which apply to Implementation Plans and residential and other sensitive land uses, respectively. Implementation of the project mitigation measures specifically described in Tables 3.11-3 and 3.11-4 would ensure consistency with the County's General Plan and Community Plan policies adopted for the purpose of avoiding or mitigating an environmental effect. These specific mitigation measures are Mitigation Measures AES-1 and AES-3; AQ-3, CUL-1, NOI-1, WF-3a and WF-3b and Community Plan EIR Mitigation Measure 5.9-3. With implementation of these mitigation measures, the solar project site would generally be consistent with applicable goals, policies, and actions. Impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Regional Transportation Plan/Sustainable Communities Strategy for Merced County (RTP/SCS). As described above, the RTP/SCS coordinates housing plans, open space and farmland conservation efforts, economic development strategies, and transportation investments, with one of the main goals being to reduce GHG emissions from cars and light-duty trucks through the year 2046 to meet state goals under SB 375. In order to do this, the RTP/SCS identifies energy, smart infrastructure, and sustainable communities as key areas to help achieve state GHG targets and climate goals, including SB 375.

The proposed project would add renewable solar-generated energy to the electricity supply and, as shown in Table 3.8-4 in Section 3.8, *Greenhouse Gas Emissions*, result in the long-term net reduction in GHG emissions. The project would also include a 100-MW battery-storage system that would help the state's electricity supply-storage capabilities. For these reasons, the proposed project would be consistent with the County's RTP/SCS, and would help California achieve its GHG reduction goals. Impacts would be less than significant, consistent with the Community Plan EIR conclusion. Therefore, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site outside the Community Plan is approximately 561 acres and in the County General Plan as Agricultural and Highway Interchange Center. Development of this land was not considered in the Community Plan EIR. The proposed project includes a General Plan Amendment and an associated Zone Change covering the solar project site to create a Utility-Scale Solar Overlay. As shown above in Figure 3.11-2 and Figure 3.11-3, this portion of the solar project site is currently designated for Agricultural and Foothill Pasture under the General Plan. Correspondingly, and as shown in Figure 3.11-4, this portion of the solar project site is designated as general agricultural (A-1), and highway interchange center (H-I-C) under the County's zoning code.

As described in detail in Chapter 2, *Project Description*, the solar project would include the development of the Las Camas solar facility on approximately 1,741 acres of privately owned land and construction of a 230-kV transmission line to connect the solar project to the PG&E substation. Therefore, the solar project would not be consistent with the existing land use designations under the General Plan, as well as zoning designations under the County's zoning code. The inconsistency with land use and zoning designations does not, by itself, constitute a significant impact because the land use and zoning designations were not enacted to mitigate or lessen environmental effects as a primary objective.

In order to accommodate the solar facility development, the proposed project would require an amendment to the County General Plan to create a Utility-Scale Solar Overlay and associated Zone Change and Conditional Use Permit covering the solar project site that allows for the following as conditional uses:

- Energy Generation Facilities (off-site energy uses) as currently allowed by Conditional Use Permits in all agricultural zones;
- Communication Equipment, Electrical Distribution/Transmission, Substation as currently allowed by Conditional Use Permits in all agricultural zones;
- Public Utility Facilities as currently allowed by Conditional Use Permits in Rural Residential zones; and
- Additional ancillary buildings, fencing, roads, and equipment.

The proposed General Plan Amendment, including the conditional uses described above, would ensure compliance with the General Plan and meet the intent of the land use policies described in detail above and in Tables 3.11-3 and 3.11-4.

The project is generally consistent with the *2030 Merced County General Plan's* and the *Villages of Laguna San Luis Community Plan* policies. Both documents contain provisions for the siting of renewable energy facilities in the county's agricultural areas. The solar project would not be required to comply with Community Plan EIR Mitigation Measures 5.1-2a and 5.1-2b, which apply to Implementation Plans and residential and other sensitive land uses, respectively. Implementation of the project-specific mitigation measures specifically described in Tables 3.11-3 and 3.11-4 would ensure consistency with the County's General Plan and Community Plan policies adopted for the purpose of avoiding or mitigating an environmental effect. These specific mitigation measures are Mitigation Measures AES-1 and AES-3; AQ-3CUL-1; NOI-1, WF-3a and WF-3b. With implementation of these mitigation measures, the solar project site would generally be consistent with applicable goals, policies, and actions. Impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Off-Site Mitigation Site

As described above in *Regulatory Setting*, the County has established agricultural preserves for areas within the county that are used for agricultural and open space uses per the Williamson Act, with the primary objective to protect agricultural lands within the County for continued agricultural production, and to preserve open space uses. The County has established that lands zoned as either General Agricultural (A-1), (A-1-40) or Exclusive Agricultural (A-2), and are consistent with the rural land use designations of the General plan may be a part of the agricultural preserve. While none of the parcels under the off-site mitigation site are currently subject to Williamson Act contracts, the exclusive Agricultural (A-2) designation does apply to the off-site mitigation site.

The off-site mitigation site would be established as part of the HCP and Incidental Take Permit process required for the proposed project. The site would be located approximately 5 miles south of the solar project site, immediately south of the Los Banos reservoir, on approximately 1,498 acres of existing grassland. The site would be established for the San Joaquin kit fox and other covered species, as necessary, and would be placed into a conservation easement in perpetuity. Specifically, this grassland area would be managed to allow for continued grazing or mowing, prohibiting the use of rodenticides. Livestock grazing would continue to be allowed on site and would be conducted under a grazing management plan with specific guidance on grass height and residual dry matter (RDM) to protect the grasslands and to allow them to continue to function as kit fox and other species' habitat. Further, all mitigation lands would adhere to County ordinances regarding fire protection, fire breaks, and fire management. The existing fencing would be maintained around the perimeter of all mitigation sites to reduce vandalism and theft. Targeted invasive plant management activities would be necessary to prevent invasion by pest plant species.

The proposed uses for the off-site mitigation site would be consistent with existing uses on site, and the existing agricultural and Foothill Pasture designation applied to the site. In addition, the off-site mitigation site would be consistent with several General Plan policies related to terrestrial wildlife mobility, including policies NR-1.1, NR-1.2, and NR-1.6. Therefore, establishment of the off-site mitigation site would not conflict with any policies or plans adopted for the purpose of avoiding or mitigating and environmental effect, nor would it conflict with the goals of the Merced County Agricultural Preserve. Impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

As described in Impact LU-1, the PG&E Substation Improvements would include transmission systems improvements to the substation to connect to it to the solar project, and to facilitate the delivery of power from the solar project, among other related improvements. All of the substation improvements would occur within the existing property owned and operated by PG&E, consistent with the existing utility uses. Therefore, because the proposed improvements would be consistent with the existing uses, and would occur within the existing PG&E property, there would be no conflicts with applicable land use policies. In addition, as stated previously, PG&E is not subject to County land use regulations, and this analysis is disclosed for informational purposes only. Impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

The impact of the whole project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, would be potentially significant due to the impact of the solar project. The solar project could cause conflicts with land use plans, policy, or regulation adopted for the purpose of avoiding or mitigating and environmental effect. Implementation of Mitigation Measures AQ-3, CUL-1, WF-3a, WF-3b, AES-1, AES-3, and NOI-1, as well as Community Plan EIR Mitigation Measure 5.9-3, would ensure that impacts would be less than significant, consistent with the Community Plan EIR conclusion. Therefore, when considering the project as a whole, ***with implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Table 3.11-3. 2030 Merced County General Plan Consistency Evaluation

General Plan Goal/Policy	Consistency Analysis
Agricultural Element	
<p>Policy AG-3.11: Solar and Wind Energy Production Facilities. Encourage the installation of solar and wind energy production facilities in agricultural areas so long as they do not result in a tax burden to the County, do not result in permanent water transfers off of productive agricultural land, or do not require cancellation of Williamson Act contracts, and do not conflict with sensitive habitats or other biological resources. In addition, approval of such facilities shall require dedications of agricultural land and habitat mitigation when impacts to these resources have been determined to be significant pursuant to CEQA, and measures to control erosion, and assurances for financing decommissioning activities.</p>	<p>CONSISTENT. As discussed in Chapter 2, <i>Project Description</i>, water for construction would either be supplied by the SLWD through existing connections to the solar project site or be trucked to the project site from the AKT irrigation well located adjacent to SR 33 at the northwest corner of AKT’s Mid-Cal property, approximately 4.4 miles north of the solar project site (Mid-Cal well). The method that is ultimately implemented will depend on which approvals are granted. As discussed in Section 3.19, <i>Utilities and Service Systems</i>, if the well option were to be implemented, current withdrawals from the well for existing agricultural users would not be reduced by construction needs of the solar project site, and irrigation would not be curtailed or reduced in any way. Under the SLWD option, the SLWD would be required to issue a Construction Water Agreement and Solar Water Management Agreement pursuant to its Rules and Regulations, ensuring that existing agricultural users are not adversely affected. As detailed in the project’s Fiscal Impact Report, the project would not be a tax burden to the County and would include habitat mitigation, measures to control erosion, and assurances for financing decommissioning activities under a decommissioning and reclamation plan. In addition, as detailed in Section 3.2, <i>Agricultural Resources</i>, since no Williamson Act land exists on the project site, the project would not require the cancellation of any Williamson Act contracts.</p>
Air Quality Element	
<p>Policy AQ-1.1: Energy Consumption Reduction. Encourage new residential, commercial, and industrial development to reduce air quality impacts from energy consumption.</p>	<p>CONSISTENT. The project would include the development of an approximately 1,740-acre solar facility that would provide an alternative and renewable energy source.</p>
<p>Policy AQ-1.6: Air Quality Improvement. Support and implement programs to improve air quality throughout the county by reducing emissions related to vehicular travel and agricultural practices.</p>	<p>CONSISTENT. As described in Section 3.3, <i>Air Quality</i>, under Impact AQ-1, the proposed project would not result in conflicts with, or obstruction the implementation of, applicable air quality plans, including those related to reducing emissions from vehicular travel and agricultural practices. In addition, the project would include the development of an approximately 1,740-acre solar facility that would provide an alternative and renewable energy source.</p>
<p>Policy AQ-1.11: Truck-Related Development. Discourage development that causes significant increases in truck traffic on roads that are not capable of accommodating truck traffic due to pavement section deficiency or other capacity limitations, unless adequate mitigation through fees or improvements in required as part of the permit approval.</p>	<p>CONSISTENT. Operation of the solar project would add a total of 58 daily trips to the area roadways. Given the minor number of additional trips, operation of the solar project would not cause significant increases in truck traffic.</p>

General Plan Goal/Policy	Consistency Analysis
<p>Policy AQ-2.1: Air Quality Plan Compliance. Require all development projects to comply with applicable regional air quality plans and policies.</p>	<p>CONSISTENT. As described in Section 3.3, <i>Air Quality</i>, under Impact AQ-1, the proposed project would not result in conflicts with, or obstruction the implementation of, applicable air quality plans.</p>
<p>Policy AQ-2.2: Development Review Process. Use the development review process to achieve measurable reductions in greenhouse gas emissions.</p>	<p>CONSISTENT. As described in Section 3.8, <i>Greenhouse Gas Emissions</i>, under Impact GHG-1, the project would result in a net decrease in GHG emissions. Operation of the project would offset the GHG emissions that would be emitted during construction.</p>
<p>Policy AQ-2.5: Innovative Mitigation Measures. Encourage innovative mitigation measures and project redesign to reduce air quality impacts by coordinating with the San Joaquin Valley Air Pollution Control District, project applicants, and other interested parties.</p>	<p>CONSISTENT. The project would be required to mitigate its air quality impacts consistent with the requirements of the SJVAPCD. In addition to implementation of dust control measures required by SJVAPCD Regulation VIII, this SEIR proposes Mitigation Measure AQ-3, which would require the implementation of additional dust control measures to reduce workers exposure to the <i>Coccidioides Immitis</i> Fungus, which can cause Valley Fever, during solar project construction.</p>
<p>Policy AQ-2.7: Air District Best Performance Standards. Require the County to use the Best Performance Standards adopted by SJVAPCD during the development review and decision-making process to ensure new projects meet the targets set by the district.</p>	<p>CONSISTENT. The project would be required to adhere to SJVAPCD Regulation VIII measures to reduce construction-related fugitive dust emissions.</p>
<p>Policy AQ-6.1: Particulate Emissions from Construction. Support the San Joaquin Valley Air Pollution Control District’s efforts to reduce particulate emissions from construction, grading, excavation, and demolition to the maximum extent feasible and consistent with State and Federal regulations.</p>	<p>CONSISTENT. The project would be subject to the rules and regulations of the SJVAPCD; compliance with SJVAPCD rules would ensure consistency with Policy AQ-6.1.</p>
<p>Policy AQ-6.2: Emissions from County Roads. Require PM10 and PM2.5 emission reductions on County-maintained roads to the maximum extent feasible and consistent with State and Federal regulations.</p>	<p>CONSISTENT. The solar project and the PG&E substation improvements would require construction contractors to use Tier 4 Final engines greater than 25 horsepower for off-road equipment to reduce construction-related exhaust emissions. In addition, all earth-disturbing activities during project construction would be required to implement the fugitive dust-control measures required by SJVAPCD Regulation VIII (e.g., watering areas of disturbed soil, limiting the speed of vehicles traveling on unpaved surfaces), which would minimize the project’s contribution to localized concentrations of PM10 and PM2.5.</p>

General Plan Goal/Policy	Consistency Analysis
<p>Policy AQ-6.3: Paving Materials. Require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.</p>	<p>CONSISTENT. The project would be subject to the rules and regulations of the SJVAPCD, along with CEQA’s requirements to avoid or minimize impacts. Specifically, the proposed access road(s) would be surfaced with an aggregate material, be dust free, and would be maintained to facilitate onsite circulation for emergency vehicles during all weather conditions.</p>
<p>Recreation and Cultural Resources Element</p>	
<p>Policy RCR-2.1: Require development projects that affect archeological sites and artifacts to avoid disturbance or damage to these sites.</p>	<p>CONSISTENT. No significant archaeological resources have been identified in the project area. However, the potential exists for encountering previously undiscovered subsurface archaeological resources during project construction. With implementation of Mitigation Measure CUL-1, impacts to archaeological resources would be minimized.</p>
<p>Policy RCR-2.5: Require that, in the event of the discovery of human remains on any project construction site, all work in the vicinity of the find will cease and the County Coroner and Native American Heritage Commission will be notified.</p>	<p>CONSISTENT. Implementation of Community Plan EIR Mitigation Measure 5.9-3 will implement this policy, and require that all work stop if any human remains are encountered during ground disturbing activities.</p>
<p>Health and Safety Element</p>	
<p>Policy HS-1.4: Ensure Earthquake Resistant Design. Require earthquake resistant design for proposed critical structures such as hospitals, fire stations, emergency communication centers, private schools, high occupancy buildings, bridges and freeway overpasses, and dams that are subject to County permitting requirements.</p>	<p>CONSISTENT. As detailed in Section 3.7, <i>Geology, Soils, and Paleontological Resources</i>, the project site is in an area known to be subject to strong seismic ground shaking. However, compliance with County building codes, including requirements specific to solar energy systems, would make potentially adverse effects associated with strong seismic ground shaking unlikely. In addition, the project applicant would be required to incorporate all recommendations in the geotechnical investigation into the project’s design.</p>
<p>Policy HS-1.6: Landslide Areas. Prohibit habitable structures on areas of unconsolidated landslide debris or in areas vulnerable to landslides.</p>	<p>CONSISTENT. The project would located on gently sloped terrain where risk of landslide is very low.</p>
<p>Policy HS-1.7: Hillside Development. Discourage construction and grading on slopes in excess of 30 percent.</p>	<p>CONSISTENT. The project site has an average slope of 4.9 percent. Therefore, any construction and grading activities would occur on slopes of less than 30 percent.</p>
<p>Policy HS-1.8: Grading Standards. Require that the provisions of the International Building Code be used to regulate projects subject to hazards from slope instability.</p>	<p>CONSISTENT. The project site has an average slope of 4.9 percent, and therefore, the potential for slope instability within the project site is low. Nonetheless, the project would comply with all building codes, and would implement all recommendations made within the geotechnical investigation into the project’s design.</p>

General Plan Goal/Policy	Consistency Analysis
<p>Policy HS-1.9: Unstable Soils. Require and enforce all standards contained in the International Building Code related to construction on unstable soils.</p>	<p>CONSISTENT. No excavation or earth moving are anticipated as part of the project, so there would be no increased risk of soil collapse. In addition, as detailed in Section 3.7, <i>Geology, Soils, and Paleontological Resources</i>, although liquefaction is a risk, there are no open faces toward which any liquefied soil could flow, and there is no risk of lateral spreading or subsidence.</p>
<p>Policy HS-3.13: Uniform Fire Code—Require the Uniform Fire Code to be used as a guide for project-level fire prevention and suppression activities, including site access, water supply, fire protection systems, and the use of fire resistant building materials.</p>	<p>CONSISTENT. The project would be designed to be consistent with the Merced County Fire Prevention Code and California Fire Code standards.</p>
<p>Policy HS-5.1: Compliance with Safety Standards—Require that hazardous materials are used, stored, transported, and disposed of in a safe manner, in compliance with local, State, and Federal safety standards.</p>	<p>CONSISTENT. As detailed in Section 3.9, <i>Hazards and Hazardous Materials</i>, any hazardous materials that are used as a result of the project, would be stored, transported, and disposed of in compliance with local, State, and federal safety standards.</p>
<p>Policy HS-7.1: Noise Standards for New Land Uses—Require new development projects to meet the standards shown in Tables HS-1 and HS-2, at the property line of the proposed use, through either project design or other noise mitigation techniques.</p>	<p>CONSISTENT. As described in the General Plan, Table HS-1 shows the noise standards for noise-sensitive areas affected by traffic, railroad, or airport noise sources in Merced County. Table HS-2 shows the interior and exterior noise standards for noise-sensitive areas affected by existing non-transportation noise sources in Merced County. Because a solar project is not considered to be a noise-sensitive use, noise reduction strategies would not need to be incorporated to reduce noise at the project site from existing off-site sources of transportation on non-transportation noise.</p>
<p>Policy HS-7.4: New Noise or Ground-borne Vibration Generating Uses—Require new commercial and industrial uses to minimize encroachment on incompatible noise or ground-borne vibration sensitive land uses. Also consider the potential for encroachment by residential and other noise or ground-borne vibration sensitive land uses on adjacent lands that could significantly impact the viability of the commercial or industrial areas.</p>	<p>CONSISTENT. The noise and vibration impacts from project construction as well as noise impacts from project operations are evaluated in Section 3.13, <i>Noise</i> (noting that the project would not result in operational sources of vibration). Impacts were determined to be within the levels identified in the Community Plan EIR. Therefore, the project would be in compliance with Policy HS-7.4.</p>
<p>Policy HS-7.5: Noise-Generating Activities—Limit noise generating activities, such as construction, to hours of normal business operation.</p>	<p>CONSISTENT. As detailed in Section 3.13, <i>Noise</i>, construction activities would generally be limited to the hours of 7:00 a.m. to 6:00 p.m. Although evening work is not specifically proposed, if work falls behind schedule, construction activities that generate low noise levels may extend past the typical daily end time of 6:00 p.m. but no later than 8:00 p.m. on a worst-case day when evening work is required. Because construction would never take place during nighttime hours, and would take place only rarely (if ever) during evening hours, the project would be consistent with this policy.</p>

General Plan Goal/Policy	Consistency Analysis
<p>Policy HS-7.7: Noise- or Vibration-Impacted Residential Area Monitoring—Consider any existing residential area “noise or vibration impacted” if the exposure to exterior noise exceeds the standards shown in Table HS-2 or if ground-borne vibration levels exceed 70 VdB. Identify and evaluate potential noise- or ground-borne-vibration-impacted areas and identify possible means to correct the identified noise/land use incompatibilities.</p>	<p>CONSISTENT. Noise and vibration impacts from project construction as well as noise impacts from project operations are evaluated in Section 3.13, <i>Noise</i>, (noting that the project would not result in operational sources of vibration). Impacts were determined to be within the levels identified in the Community Plan EIR for all topics. Therefore, the project would be in compliance with Policy HS-7.7.</p>
<p>Policy HS-7.12: New Project Noise Mitigation Requirements—Require new projects to include appropriate noise mitigation measures to reduce noise levels in compliance with the Table HS-2 standards within sensitive areas. If a project includes the creation of new non-transportation noise sources, require the noise generation of those sources to be mitigated so they do not exceed the interior and exterior noise level standards of Table HS-2 at existing noise-sensitive areas in the project vicinity. However, if a noise-generating use is proposed adjacent to lands zoned for residential uses, then the noise generating use shall be responsible for mitigating its noise generation to a state of compliance with the standards shown in Table HS-2 at the property line of the generating use in anticipation of the future residential development.</p>	<p>POTENTIALLY INCONSISTENT. The property line for the solar project abuts parcels that are designated in the Community Plan for residential land uses, some of which are developed with residential uses (e.g., the existing residential neighborhood to the north, which predates the Community Plan) and some of which are vacant (e.g., the remaining Community Plan areas to the north, south, and east, including the off-site residential redesignation area). The analysis in Section 3.13, <i>Noise</i>, of this SEIR determined that impacts on existing residential land uses would not exceed the level of impact identified in the Community Plan EIR. Policy HS-7.12 requires new noise-generating uses, such as the solar project, to mitigate noise impacts on future residential uses. Based on the analysis in Section 3.13, <i>Noise</i>, noise levels generated by the solar project could exceed the standards established in Table HS-2 at the property line where future residential uses could be developed under the Community Plan. Therefore, the project is potentially inconsistent with this policy.</p>
<p>Public Facilities and Services Element</p>	
<p>Policy PFS-2.6: Septic System Standards. Require adequate standards for private septic systems to protect water quality and public health.</p>	<p>CONSISTENT. The solar facility is anticipated to generate a small amount of solid waste through maintenance and operation activities. This waste would be managed by SLWD. In addition, the solar project would not include any permanent wastewater fixtures.</p>
<p>Policy PFS-3.1: Stormwater Management Plans – Require stormwater management plans for all Urban Communities to reduce flood risk, protect soils from erosion, control stormwater runoff, and minimize impacts on existing drainage facilities.</p>	<p>CONSISTENT. The project would involve the development of an approximately 1,740-acre solar facility that would provide an alternative and renewable energy source. No new stormwater facilities are planned for construction outside the project site. Project conditions are not expected to increase stormwater runoff or pollutants substantially such that new drainage facilities would be necessary. Runoff would not exceed the capacity of stormwater drainage systems and there would be no additional sources of polluted runoff, and no stormwater management plan would be necessary.</p>

General Plan Goal/Policy	Consistency Analysis
<p>Policy PFS-3.2: Stormwater Facilities in New Development – Require that new development in unincorporated communities includes adequate stormwater drainage systems. This includes adequate capture, transport, and detention/retention of stormwater.</p>	<p>CONSISTENT. See analysis provided for Policy PFS-3.1 above.</p>
<p>Policy PFS-3.5: Pre-Development Storm Flows – Require on-site detention/retention facilities and velocity reducers when necessary to maintain pre-development storm flows and velocities in natural drainage systems.</p>	<p>CONSISTENT. See analysis provided for Policy PFS-3.1 above.</p>
<p>Policy PFS-3.6: Retention/Detention Facility – Encourage stormwater detention/retention project designs that minimize drainage concentrations and impervious coverage, avoid floodplain areas, are visually unobtrusive and, where feasible, provide a natural watercourse appearance and a secondary use, such as recreation.</p>	<p>CONSISTENT. See analysis provided for Policy PFS-3.1 above.</p>
<p>Policy PFS-5.3: New Transmission Lines and Distribution Lines. Encourage new transmission and distribution lines within existing utility easements and rights-of-way, joint-use of easements among different utilities.</p>	<p>CONSISTENT. The PG&E Substation Improvements would include transmission systems improvements to the existing substation to connect to it to the solar project, and to facilitate the delivery of power from the solar project. All of the substation improvements would occur within the existing property owned and operated by PG&E, consistent with the existing utility uses. In addition, the project would include an approximately 0.4-mile-long gen-tie line that would connect the solar project to the generation facilities at the substation, with corresponding easements established. Other existing utility and access easement detailed in Chapter 2, <i>Project Description</i>, would be maintained, with the proposed solar panels placed around each of the easements to maintain access.</p>
<p>Water Element</p>	
<p>Policy W-1.1: Countywide Water Supply – Ensure that continued supplies of surface and groundwater are available to serve existing and future uses by supporting water districts and agencies in groundwater management and water supply planning; requiring that new development have demonstrated long-term water supply; and assisting both urban and agriculture water districts in efforts to use water efficiently.</p>	<p>CONSISTENT. A water supply assessment was prepared for the project to evaluate water supply demand under normal year, single-dry year, and multiple-dry year conditions (Appendix 3.19-1 to this EIR). Water during construction of the project would be used primarily for dust control. Water during operation of the project would be used for panel washing, which would occur once per year; fire control; and irrigation of the landscape screening. Water would be stored in a 5,000-gallon tank on-site. Water would be provided from either the SLWD or the Mid-Cal well, depending on the approvals granted, and would be sufficient to serve construction and operation of the project under either scenario.</p>

General Plan Goal/Policy	Consistency Analysis
<p>Policy W-1.2: Demonstrating Sufficient Water Supply for New Development – Require all new development within the adopted service area of a water purveyor to demonstrate adequate quantity and quality of water will be available prior to issuing building permits.</p>	<p>CONSISTENT. A water supply assessment was prepared for the project to evaluate water supply demand under normal year, single-dry year, and multiple-dry year conditions (Appendix 3.19-1 to this EIR). The water provided to the project site would be provided by the SLWD or sourced from the Mid-Cal well, depending on the approvals granted, and would be sufficient to serve construction and operation of the project under either scenario.</p>
<p>Policy W-1.7: Water Sufficiency Requirement – Require new developments to prepare a detailed source water sufficiency study and water supply assessment per Title 22 and SB 610, consistent with any Integrated Regional Water Management Plan or similar water management plan. This shall include studying the effect of new development on the water supply of existing users, with public input.</p>	<p>CONSISTENT. A water supply assessment was prepared for the project. in order to evaluate water supply demand under normal year, single-dry year, and multiple-dry year conditions. Please refer to Appendix 3.19-1 for the WSA.</p>
<p>Policy W-2.2: Development Regulations to Protect Water Quality – Prepare updated development regulations, such as best management practices, that prevent adverse effects on water resources from construction and development activities.</p>	<p>CONSISTENT. The project would not be detrimental to water resources. It would use an assured source of water during construction (for dust control) and operation (once per year for panel washing), provided from the SLWD or the Mid-Cal well, depending on the approvals received, and would comply with applicable approval requirements. Pursuant to BMPs under the required SWPPP, sources of contamination would be minimized during construction and no water would be allowed to flow off-site during construction in order to prevent adverse effects on water resources.</p>
<p>Policy W-2.7: NPDES Enforcement – Monitor and enforce provisions of the U.S. Environmental Protection Agency National Pollution Discharge Elimination System (NPDES) program to control non-point source water pollution.</p>	<p>CONSISTENT. A storm water pollution prevention program (SWPPP) would be developed and implemented to reduce water quality impacts during construction and operation of the project.</p>
<p>Policy W-3.6: New Construction – Promote efficient water conveyance systems in new construction, including systems for the recycling of greywater.</p>	<p>CONSISTENT. Water use during construction and operation of the project would be limited to the greatest extent possible. Water during construction would be used primarily for dust control, and water during operation would be used for panel washing once per year. The water provided to the project site would come from the SLWD or the Mid-Cal well, depending on the approvals received, and would comply with applicable water conservation requirements.</p>

General Plan Goal/Policy	Consistency Analysis
Land Use and Community Character Element	
<p>Policy LU-2.2: Foothill Pasture Designation—Apply the Foothill Pasture land use designation on agricultural and open space lands located on the eastern and western edges of the county which are recognized for their value as grazing, cropland, and open space.</p>	<p>CONSISTENT. This policy describes the project site’s current land use designation. In order to accommodate the solar facility development, the proposed project would require an amendment to the County General Plan and community plan to create a Utility-Scale Solar Overlay and associated zone change covering the solar project site. However, these amendments would maintain the base Foothill Pasture land use designation.</p>
<p>Policy LU-2.3: Land Use Activity Limitations—Limit allowed land use within Agricultural and Foothill Pasture areas to agricultural crop production, farm support operations, and grazing and open space uses.</p>	<p>CONSISTENT. This policy refers to the allowed land uses in the context of implementation through the Zoning Code. The project does not include crop production, farm support operations, or grazing and open space uses. This alone does not indicate that the project is inconsistent with the General Plan. Policies LU 2.5 and LU 2.7 provide that other land uses may be approved in agricultural areas upon approval of a discretionary land use permit. In addition, in order to accommodate the solar facility development, the proposed project would require an amendment to the County General Plan and community plan to create a Utility-Scale Solar Overlay and associated zone change covering the solar project site.</p>
<p>Policy LU-2.5: Agricultural Support Facilities—Allow consideration of locating characteristically-specific commercial and industrial uses in rural areas in limited cases based on the unique nature of the use and for health and safety reasons, which require location on large parcels or in sparsely populated areas. In addition, consider the following criteria during the Conditional Use Permit review process:</p> <ul style="list-style-type: none"> a) The use requires location in a rural area because of one or more of the following characteristics: unusual site area requirements, natural resource production purposes, the use is directly agricultural related, or because of specific operational characteristics which pose a health or safety problem to urban populations. b) The use is located near or readily accessible to a probable work force. c) The use is consistent with the intent and policies of the Agricultural, Natural Resources, and Health and Safety Elements. 	<p>CONSISTENT. Policy LU 2.5 describes the criteria under which commercial and industrial uses may be approved in rural areas. The project is neither commercial nor industrial, although it has some characteristics of an industrial use. Therefore, these criteria are applicable as the means of determining whether to approve a CUP for the project. The following describes the project’s consistency with these criteria. In addition, in order to accommodate the solar facility development, the proposed project would require an amendment to the County General Plan and community plan to create a Utility-Scale Solar Overlay and associated zone change covering the solar project site.</p> <ul style="list-style-type: none"> a) The solar park has unusual site requirements: PV solar energy collectors consist of flat sheets of PV cells set out in arrays which capture the sun’s rays to generate electricity. This requires a large amount of open land to support the arrays, with excellent solar gain and proximity to existing transmission lines. The project’s size is determined by the planned capacity. The size requirement and need for unobstructed access to sunlight dictate that it be located in a rural area. b) The site is near the communities of Laguna San Luis, Santa Nella, and the city of Los Banos. The California Economic Development Department reported that the 2021 annual average of Los Banos unemployment rate was approximately 13.1% (no statistics are available for Santa Nella or Laguna San Luis), (California Employment Development Department 2022), with about 2,200 residents unemployed. This condition provides an accessible work force for the project. c) Consistency with the pertinent agricultural, health and safety, and natural resources elements policies are discussed throughout this table. The project would not include any habitable structures, the site is not geologically unstable, and therefore would not represent a seismic or

General Plan Goal/Policy	Consistency Analysis
<p>d) The use will not significantly impact adjacent agricultural, recreational, natural, cultural, wildlife, or other identified Natural Resources Element.</p> <p>e) The use is protected from hazards identified in the Health and Safety Element.</p> <p>f) The use is not located on productive agricultural land when nonproductive agricultural land is available in the vicinity of the proposed project.</p> <p>g) The use is limited in size, time of operation, or length of permit authority where necessary to ensure compatibility with adjacent land uses.</p> <p>h) The use shall not have a detrimental effect on surface or groundwater resources.</p> <p>i) The use shall provide adequate infrastructure and improvements to reduce impacts on County services.</p> <p>j) The use shall have access to adequate transportation facilities without creating abnormally high traffic volumes and shall provide road improvements to mitigate impacts generated by the project.</p>	<p>geologic risk. The site is not subject to flood hazard. The proposed project is located in an area considered at high to moderate risk for wildland fires, however, the fire hazards section of the policies of the health and safety element does not address this type of development. Nonetheless, the project incorporates fire safety provisions such as incorporating BMPs into construction to avoid accidentally starting a fire, and compliance with fire code requirements and on-site water supply to reduce the risk from wildlands fire during operation. The site is not at risk from airports and the facility would not put any airports at risk. The project would not use nor generate substantial amounts of hazardous waste; hazardous materials such as fuel and lubricants used during construction will be controlled by the SWPPP. The project would help reduce greenhouse gases (GHGs) by contributing to California utilities' meeting the state's Renewable Portfolio Standard (RPS) and would not be affected by site-specific impacts of climate change. The project would not generate substantial noise. The environmental justice policies are not directly applicable to this proposal. The project would implement dust control measures required by SJVAPCD Regulation VIII, as well as Mitigation Measure AQ-3 proposed in this SEIR, which would require the implementation of additional dust control measures to reduce workers exposure to the <i>Coccidioides Immitis</i> Fungus, which can cause Valley Fever, during solar project construction. Furthermore, the rezoning of land for the reallocation of housing within the Community Plan for the life of the solar project does not expand areas designated for housing within the Community Plan, and therefore, would not conflict with Farmland designated as of Local Importance and Grazing Land on the project site.</p> <p>d) The project's effects on adjacent agriculture, natural resources (including wildlife), and cultural resources are described in the pertinent sections of this SEIR. Recreation will not be directly affected by the project. The underlying Community Plan designations would remain unchanged.</p> <p>e) The project site and the proposed type of development are not subject to risk of hazards. Mitigation Measure WF-3a would ensure battery containers are fitted with a fire suppression system. To the extent that the site may be subject to wildfire, the project includes BMPs that would avoid unnecessary risk, as well as Mitigation Measure WF-3b, which would require implementation of a fire protection plan.</p> <p>f) As shown in Figure 3.2-2, in Section 3.2, <i>Agricultural and Forestry Resources</i>, the vast majority (94.77 percent) of the soils underlying the solar project site are Class 4. These have very severe limitations that reduce the choice with respect to plants or require very careful management, or both. A small percentage of Class 6 soils (4.33 percent) and Class 7 soils (0.90 percent) also underlie the solar project site. These classifications have even greater limitations compared with Class 4.</p> <p>g) The area surrounding the project site is largely undeveloped, with the exception of residential uses and RV park to the north of the solar project site. At this time, the project would be compatible with those uses. In the future, if the Villages at Laguna San Luis development is built</p>

General Plan Goal/Policy	Consistency Analysis
	<p>out, then the project would be located adjacent to an urbanized development. However, the project would have a lifespan of 35 years, and would be decommissioned thereafter, returning the site to its current conditions.</p> <p>h) The project would not be detrimental to either surface or groundwater resources. It would use an assured source of water during construction (for dust control) and operation (once per year for panel washing, landscape irrigation, and fire control), provided from the SLWD or the Mid-Cal well, depending on the approvals received, and would comply with applicable approval requirements. The cost of this water would preclude its inefficient use. Pursuant to BMPs under the required SWPPP, sources of contamination would be minimized during construction and no water would be allowed to flow off-site during construction.</p> <p>i) The project would require minimal services from the County (e.g., fire protection from CalFire, road maintenance by County). Billy Wright Road would be the primary access point to the County road system and would be kept in good condition by the project applicant.</p> <p>j) The Project would result in a temporary increase in the level of traffic along Billy Wright Road during construction. However, because construction-related activities associated with the project would be temporary and would cease once the project is constructed, these impacts are presumed to be less than significant. In addition, the project would generate only minimal daily traffic when in operation and therefore, once construction was completed, it would not generate levels of traffic that would be incompatible with existing and planned development in the area.</p>
<p>Policy LU-2.7: Rural Energy Production—Allow the development of ethanol production, co-generation, solar, and wind facilities in Agricultural and Foothill Pasture areas that produce renewable energy, support agricultural-related industries, and/or use agricultural waste, provided that such uses do not interfere with agricultural practices or conflict with sensitive habitats or other biological resources.</p>	<p>CONSISTENT. The project is a solar energy facility that would produce renewable energy, consistent with this policy. The soils analysis shows this land to be of low value for agricultural use and mostly planned for residential development as part of the Community Plan.</p>
<p>Policy LU-5.B.10: Green Building Development—Maximize the use of passive and active solar and/or wind energy resources, and require incorporation of green building design and technology into new development within urban communities.</p>	<p>CONSISTENT. The project would include the development of an approximately 1,740-acre solar facility that would provide an alternative and renewable energy source. The project would also include the construction of a gen-tie line to connect the solar facility to the PG&E Los Banos station for distribution.</p>

General Plan Goal/Policy	Consistency Analysis
Natural Resources Element	
Policy NR-1.2: Protected Natural Lands—Identify and support methods to increase the acreage of protected natural lands and special habitats, including but not limited to, wetlands, grasslands, vernal pools, and wildlife movement and migration corridors, potentially through the use of conservation easements.	CONSISTENT. The solar project design incorporates multiple corridors through the solar project site to facilitate wildlife movement—specifically, for kit fox and tule elk. The corridors would generally follow the four utility easements and one transmission line easement, and project infrastructure would be setback from these easements. The width of these corridors would be approximately 500 feet. In addition, as part of compliance with ESA, the project applicant is preparing an HCP through the incidental take permit process. The HCP being prepared for this project includes the establishment of an off-site mitigation site for the kit fox, and other species, as necessary, in an area of approximately 1,498 acres of grassland 5 miles south of the solar project site, immediately south of the Los Banos reservoir. The lands will be placed under a conservation easement in accordance with the HCP.
Policy NR-1.4: Important Vegetative Resource Protection—Minimize the removal of vegetative resources which stabilize slopes, reduce surface water runoff, erosion, and sedimentation.	CONSISTENT. During construction, the project would remove the existing vegetation from approximately 1,240 acres. As a provision of the HCP proposed for the project, the area that will be disturbed during construction and that will not be covered by panels or other structures once the project is installed, will be seeded as grassland. The goals of grassland management on the site will be focused on fire suppression and providing habitat for grassland species. Once established, this newly seeded grassland is expected to provide ecological benefits to native species in the region because it will support a prey base (e.g., small mammals, insects) that has been absent for several decades while the land has been under cultivation.
Policy NR-1.5: Wetland and Riparian Habitat Buffer. Identify wetlands and riparian habitat areas and designate a buffer zone around each area sufficient to protect them from degradation, encroachment, or loss.	CONSISTENT. As discussed in Section 3.4, <i>Biological Resources</i> , the project site contains potential aquatic habitats. In the event that project improvements would impact jurisdictional wetlands, riparian habitat areas, or other waters, permits would be obtained and impacts would be mitigated in accordance with permit requirements.
Policy NR-1.6: Terrestrial Wildlife Mobility—Encourage property owners within or adjacent to designated habitat connectivity corridors that have been mapped or otherwise identified by the California Department of Fish and Game [California Department of Fish and Wildlife] or U.S. Fish and Wildlife Service to manage their lands in accordance with such mapping programs. In the planning and development of public works projects that could physically interfere with wildlife mobility, the County shall consult with the California Department of Fish and Game or U.S. Fish and Wildlife Service to determine the potential for such effects and implement any feasible mitigation measures.	CONSISTENT. The project site is used by San Joaquin kit fox. The project will, as part of its federal incidental take permit, minimize its impacts on kit fox movement across the site. In addition, the solar project design incorporates multiple pathways through the solar project site to facilitate wildlife movement. The corridors would generally follow the four utility easements and one transmission line easement, and project infrastructure would be setback from these easements.

General Plan Goal/Policy	Consistency Analysis
<p>Policy NR-1.7: Agricultural Practices—Encourage agricultural, commercial, and industrial uses and other related activities to consult with environmental groups in order to minimize adverse effects to important or sensitive biological resources.</p>	<p>CONSISTENT. This policy will be met through the CEQA process, whereby environmental groups will have the opportunity to review and comment on the EIR prepared for the project. In addition, the public hearing process required for a Conditional Use Permit application under County ordinance will provide notice. Nearby residents and the general public will be invited to attend the hearing, the County and applicant staff will be in attendance to present project design information and solicit community comments for the final design and appearance of the project buildings.</p>
<p>Policy NR-1.8: Use of Native Plant Species for Landscaping. Encourage the use of native plant species in landscaping, and, where the County has discretion, require the use of native plant species for landscaping.</p>	<p>CONSISTENT. Where feasible, the project would incorporate landscaping using native plant species.</p>
<p>Policy NR-1.11: On-Going Habitat Protection and Monitoring. Cooperate with local, State, and Federal agencies to ensure that adequate on-going protection and monitoring occurs adjacent to rare and endangered species habitats or within identified significant wetlands.</p>	<p>CONSISTENT. As part of the CEQA review and state and federal ITP processes, the project applicant would be required to cooperate with all local, State, and Federal agencies to ensure that adequate protection and monitoring occurs for special-status species’ habitats, and within identified significant wetlands, as detailed in Section 3.4, <i>Biological Resources</i>.</p>
<p>Policy NR-1.12: Wetland Avoidance. Avoid or minimize loss of existing wetland resources by careful placement and construction of any necessary new public utilities and facilities, including roads, railroads, high speed rail, sewage disposal ponds, gas lines, electrical lines, and water/wastewater systems.</p>	<p>CONSISTENT. As discussed in Section 3.4, <i>Biological Resources</i>, the project site contains potential aquatic habitats. Impacts to potential wetlands would be avoided if possible. In the event that the project would impact jurisdictional wetlands, permits would be obtained and impacts would be mitigated in accordance with permit requirements.</p>
<p>Policy NR-1.13: Wetland Setbacks. Require an appropriate setback, to be determined during the development review process, for developed and agricultural uses from the delineated edges of wetlands.</p>	<p>CONSISTENT. As discussed in Section 3.4, <i>Biological Resources</i>, the project site contains potential aquatic habitats. Impacts to jurisdictional wetlands and other waters would be avoided if possible. If the project improvements would impact jurisdictional features, permits would be obtained and impacts would be mitigated in accordance with permit requirements.</p>
<p>Policy NR-1.17: Agency Coordination—Consult with private, local, State, and Federal agencies to assist in the protection of biological resources and prevention of degradation, encroachment, or loss of resources managed by these agencies.</p>	<p>CONSISTENT. This policy will be met through the CEQA process and through the process of obtaining an incidental take permits from USFWS and CDFW. The agencies will also have the opportunity to review and comment on the EIR prepared for the project.</p>

General Plan Goal/Policy	Consistency Analysis
Policy NR-2.1: Renewable Energy Use—Promote the development and use of renewable energy resources to reduce dependency on petroleum-based energy sources	CONSISTENT. The project furthers this policy by producing renewable energy in the form of electricity generated from PV solar arrays.
Policy NR-2.2: Clean Alternative Energy Requirement. Encourage new electricity providers to use only clean alternative energy sources (e.g., solar, thermal, wind).	CONSISTENT. The project would include the development of an approximately 1,740 acre solar facility that would provide an alternative and renewable energy source. The project would also include the construction of a gen-tie line to connect the solar facility to the PG&E Los Banos station for distribution.
Policy NR-2.4: Solar Power—Encourage on-site solar power use in residential, commercial, and industrial buildings, and utility-scale solar facilities in rural locations that do not harm long-term agricultural productivity and habitat values consistent with Policies AG-3.11 and LU-2.7.	CONSISTENT. The project furthers this policy by producing renewable energy in the form of electricity generated from PV solar arrays. It will have a lifespan of approximately 35 years that would limit its impacts on agricultural land. Habitat values would be maintained under the state and federal incidental take permit and the associated HCP that will apply to the project.
Policy NR-2.6: Open Space Impacts—Work with public agencies and private energy providers to ensure that energy projects avoid or minimize impacts to open space, natural resources, and productive agricultural land.	CONSISTENT. The EIR process will ensure that the project works with public agencies, including the County, to minimize impacts.
Policy NR-2.9: Energy Conservation—Encourage and maximize energy conservation and identification of alternative energy sources.	CONSISTENT. The project would include the development of an approximately 1,740 acre solar facility that would provide an alternative and renewable energy source.
Policy NR-3.1: Soil Protection—Protect soil resources from erosion, contamination, and other effects that substantially reduce their value or lead to the creation of hazards.	CONSISTENT. The project would protect the site against erosion through BMPs, as required by the SWPPP and any other measures that would be required through the CUP. At the end of the project’s lifetime, the site would be restored to its pre-project condition. This would avoid a substantial reduction in the value of the site’s soil resources.
Policy NR-3.2: Soil Erosion and Contamination—Require minimal disturbance of vegetation during construction to improve soil stability, reduce erosion, and improve stormwater quality.	CONSISTENT. The project would disturb approximately 1,229 acres during construction. This policy would be met by revegetation of the site to avoid erosion during operation.
Policy NR-4.1: Scenic Resource Preservation—Promote the preservation of agricultural land, ranch land, and other open space areas as a means of protecting the county’s scenic resources.	CONSISTENT. As detailed in Section 3.2, <i>Agricultural Resources</i> , 99.7 percent of the solar project site is designated as Farmland of Local Importance and Grazing Land. The solar project site does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Farmland of Local Importance and Grazing Land are not listed in Appendix G of the CEQA Guidelines and are not defined as <i>productive farmland</i> in the <i>2030 Merced County General Plan</i> . Therefore, construction and operation of the solar project would result in a less

General Plan Goal/Policy	Consistency Analysis
<p>Policy NR-4.2: Special Review Process for Structures Adjacent to Scenic Highways— Coordinate with Caltrans, during the review of proposed structures and activities located adjacent to State-designated scenic highways, to ensure that scenic vistas and local scenic values are not significantly degraded.</p>	<p>than significant impact on agricultural resources. In addition, following decommissioning, the site would be restored to its current condition. The rezoning of land for the reallocation of housing within the Community Plan for the life of the solar project does not expand areas designated for housing within the Community Plan. The Habitat Conservation Area retains its site in conservation, in its natural form, therefore protecting the County’s scenic resources.</p>
<p>Policy NR-4.4: New Roads. Consider the surrounding landscape, topography, and existing scenic values when determining the location and construction of new roads.</p>	<p>CONSISTENT. The portion of SR 152 north of the project site is designated as a Scenic Highway (California Department of Transportation 2018). Therefore, throughout the preparation of the proposed project’s EIR, Caltrans will have the opportunity to review and comment on the EIR prepared for the project. In addition, the project would include screening from the public right-of-way, and drought-tolerant landscaping along the property line abutting the residential uses to the north of the project site, to reduce visual impacts to SR 152.</p>
<p>Policy NR-4.5: Light Pollution Reduction. The County shall develop and implement a lighting ordinance to require good lighting practices, such as the use of specific light fixtures that reduce light pollution, minimize light impacts, and preserve views of the night sky. The ordinance shall contain standards to avoid light trespass, particularly from developed uses, to sensitive wildlife corridors and refuges.</p>	<p>CONSISTENT. The project would include perimeter roads and evenly distributed interior access roads within the solar project site, which would conform to County standards. In addition, the existing roads would be improved, and new roads would generally comprise an aggregate or native base to minimize visual impacts.</p> <p>CONSISTENT. The project would include lighting for ongoing maintenance and security purposes. All solar project lighting would be used from dusk to dawn and would be shielded and directed downwards to minimize light impacts to nearby properties. In addition, proposed lighting would conform to National Electric Safety Code (NESC) requirements and all applicable County outdoor lighting codes.</p>
<p>Transportation and Circulation Element</p>	
<p>Policy CIR-1.17: Encroachment Permits. Require encroachment permits to control access points on public roads.</p>	<p>CONSISTENT. The project would require a Right-of-Way encroachment permit from Caltrans for project work or the transportation of project-related materials on oversize/overweight vehicles within the State highway rights-of-way.</p>

Table 3.11-4. Villages of Laguna San Luis Community Plan Consistency Evaluation

Community Plan Goal/Policy	Consistency Analysis
<p>Goal 3.0: Develop a community that is responsive to its natural setting and that promotes conservation of water and non-renewable resources, and minimizes pollutant emissions.</p>	<p>CONSISTENT. The project would involve the development of an approximately 1,740 acre solar facility that provide an alternative and renewable source of energy, which could potentially be used by future development under the Community Plan.</p>
<ul style="list-style-type: none"> Policy 3.A.2: Minimize traffic external to the community (i.e., commuter traffic) through an appropriate distribution of jobs, housing types, and shopping opportunities. 	<p>CONSISTENT. Operation of the solar project would add a total of 58 daily trips to the area roadways. Given the minor number of additional trips, operation of the solar project would not cause significant increases in truck traffic.</p>
<ul style="list-style-type: none"> Policy 3.B.2: Development on hillsides shall be responsive to visual and safety considerations. 	<p>CONSISTENT. The project site has an average slope of 4.9 percent.</p>
<ul style="list-style-type: none"> Goal 4.0: Placement and design of structures that minimize land use conflicts. 	<p>CONSISTENT. In order to accommodate the solar facility development, the proposed project would require an amendment to the County General Plan and community plan to create a Utility-Scale Solar Overlay and associated zone change covering the solar project site to minimize land use conflicts. In addition, the project would incorporate setbacks in order to maintain access to existing utility and access easements, as well as existing uses near the SR 33/152 interchange.</p>
<ul style="list-style-type: none"> Policy 4.A.1: Reduce visual and noise impacts of commercial and industrial uses on adjacent residential properties and neighborhoods by incorporating grading, landscaping, and other design treatments to screen parking, refuse storage, utility and other activity areas. 	<p>CONSISTENT. The project would convert undeveloped, non-native annual grassland and dry farmed agricultural land to solar energy generation. This would change the view of this land from open land to flat panel solar arrays. At some future time, when the Villages at Laguna San Luis are developed, the Las Camas solar park would be seen as a developed land use associated with those developments. However, the project would result in changes to the existing visual character. Mitigation Measure AES-3 would limit project construction to daylight hours when occurring next to residences to reduce the amount of construction effects experienced by viewer groups.</p> <p>Mitigation Measure AES-1 would further reduce the potential aesthetic effect of the solar facility by requiring that a landscape buffer be planted parallel to SR 152 and within portions of the project site directly abutting SR 152. The landscape buffer shall serve as a visual buffer to screen views of the solar project features and improve the visual quality of the roadway corridor while maintaining views of surrounding hillsides and providing kit fox passage. Further, Mitigation Measure NOI-1 would incorporate barriers or enclosures that block the line of sight between a noise source (e.g., a generator) and a receiver.</p>

Community Plan Goal/Policy	Consistency Analysis
<ul style="list-style-type: none"> Policy 4.A.2: Minimize light and glare impacts upon development while maintaining adequate health and safety standards. 	<p>CONSISTENT. See analysis provided for Policy 4.A.1 above. Implementation of Mitigation Measures AES-1, AES-3, and NOI-1 would ensure project consistency with this policy. Furthermore, as discussed in Section 3.1, <i>Aesthetics</i>, the solar project would include low-level security and wayfinding lighting, and light spillover on to adjacent properties would be minimal.</p>
<ul style="list-style-type: none"> Policy 4.A.4: Ensure access to and minimize hazards from utility pipelines which traverse the community through utilization as components of the open space trail and circulation systems. 	<p>CONSISTENT. As detailed in Section 3.9, <i>Hazards and Hazardous Materials</i>, existing utility and access easement would be maintained, with the proposed solar panels placed around each of the easements to maintain access. In addition, any utility-related hazards as a result of the project would be minimize through compliance with local, State, and Federal safety standards.</p>
<ul style="list-style-type: none"> Policy 4.A.5: Establish means to minimize conflicts between residential neighborhoods and the Billy Wright Road Landfill. 	<p>CONSISTENT. As described in detail under Impact LU-2 above, future development under the off-site General Plan amendment could occur, resulting in potential land use conflicts with the Billy Wright Landfill. As required by the community plan, any future development under the amendment would require implementation plan approval for each specific area identified within the community plan. Implementation plans must not only be consistent with the community plan, but also include specific implementation measures identified in the community plan. Implementation plan approval by the County is a discretionary action, and as explained in the community plan, supplemental environmental review will be required for approval of the implementation plans (refer to Community Plan EIR Table 5-02). Specifically, page 1-3 of the Community Plan EIR states, “no development may occur until such time as additional environmental review has been completed for each implementation plan in accordance with CEQA” (County of Merced 2007). Future development within the off-site residential redesignation area, should it occur, would be subject to this requirement, including any identified mitigation measures related to land use or mitigating an environmental effect identified as part of the CEQA review process. Further, future development under the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR, such as Mitigation Measures 5.1-2a (Billy Wright Landfill), which requires the establishment of at least 300-foot buffers between the landfill and proposed residences to minimize potential conflicts between uses.</p>

Community Plan Goal/Policy	Consistency Analysis
<ul style="list-style-type: none"> Policy 4.A.6: Avoid incompatibility conflicts with the major PG&E substation and adjacent land uses. 	<p>CONSISTENT. The PG&E Substation Improvements would include transmission systems improvements to the existing substation to connect to it to the solar project (including the gen-tie line), and to facilitate the delivery of power from the solar project. All of the substation improvements would occur within the existing property owned and operated by PG&E, consistent with the existing utility uses. The expanded substation site would be approximately 400 feet from adjacent uses to the east. Other existing utility and access easements detailed in Chapter 2, <i>Project Description</i>, would be maintained, with the proposed solar panels placed around each of the easements to maintain access.</p>
<ul style="list-style-type: none"> Policy 4.B.1: Minimize hazards to development from wildland fires on adjacent lands though compliance with the California Division of Forestry State Responsibility Area (SRA) Fire Safe Regulations (Title 14, Chapter Articles 1-5). 	<p>CONSISTENT. The proposed project is located in an area considered at high to moderate risk for wildland fires. The project incorporates fire safety provisions such as incorporating BMPs into construction to avoid accidentally starting a fire, and compliance with fire code requirements and on-site water supply to reduce the risk from wildlands fire during operation. There will be a 5,000-gallon water tank on-site to facilitate irrigation, panel washing ,and fire suppression. In addition, Mitigation Measure WF-3a would ensure battery containers are fitted with a fire suppression system, and Mitigation Measure WF-3b, would require implementation of a fire protection plan.</p>
<ul style="list-style-type: none"> Policy 4.B.2: Minimize conflicts between development and agricultural operations through the use of buffer areas or larger lots along the edge of the CP. 	<p>CONSISTENT. As detailed in Chapter 2, <i>Project Description</i>, the project would incorporate setbacks from existing uses in order to minimize potential land use conflicts.</p>
<ul style="list-style-type: none"> Policy 4.E.1: Residential and other noise sensitive land uses shall not be located in areas exposed to current or projected noise levels that exceed 65 dBA L_{dn}, or other community noise standards established in the General Plan Noise Chapter. 	<p>CONSISTENT. As detailed in Section 3.13, <i>Noise</i>, it is possible that noise from the proposed emergency generator would be below the allowable noise levels in the County. However, because specific details regarding the size of the emergency generator, the location, and the testing schedule are currently unknown, it is conservatively assumed that the proposed emergency generator could result in noise levels in excess of allowable limits at nearby sensitive uses in the county during testing. This is especially true if generator testing were to occur during evening or nighttime hours when people are generally considered more sensitive to noise. To reduce the potential operational noise impacts of the emergency generator, Mitigation Measure NOI-1, Design the solar project emergency generator installation to comply with the Requirements of MCC during periodic testing, would be implemented. With implementation of Mitigation Measure NOI-1, the emergency generator would not result in noise levels in excess of thresholds in the county.</p>

Community Plan Goal/Policy	Consistency Analysis
<ul style="list-style-type: none"> Policy 4.E.2: Measures to buffer or screen noise sources are designed in an efficient and visually responsible manner. 	<p>CONSISTENT. A vegetated screen is proposed for development along the northern perimeter of the solar project site near the adjacent residential land uses. In addition, Mitigation Measure NOI-1 would incorporate enclosures or barriers that block the line of sight between a noise source (e.g., a generator) and a receiver.</p>
<ul style="list-style-type: none"> Policy 1.E.1: Provide a minimum 50 foot landscaped corridor along both sides of the State Scenic Highway 152. 	<p>CONSISTENT. The portion of SR 152 north of the project site is designated as a Scenic Highway (California Department of Transportation 2018). The project would include screening from the public right-of-way, and drought-tolerant landscaping along the property line abutting the residential uses to the north of the project site, to reduce visual impacts to SR 152.</p>
<ul style="list-style-type: none"> Policy 1.E.3: Locate noise tolerant land uses closest to the Scenic Highway to reduce the need for sound walls. 	<p>CONSISTENT. The project would involve the development of an approximately 1,740 acre solar facility adjacent to the portion of SR 152 that is designated as a scenic highway.</p>
<ul style="list-style-type: none"> Policy 1.G.1: Conserve prominent natural drainageways and design stormwater conveyance and detention components to emulate natural landforms. 	<p>CONSISTENT. The project site contains potentially jurisdictional features (including an ephemeral stream) within the southeastern portion of the site. Nonetheless, the project would incorporate setbacks of 175–500 feet from these features as demonstrated on Figure 2-2, in Chapter 2, <i>Project Description</i>, to avoid impacts on these features to the extent feasible. In the event that the project would impact jurisdictional features, permits would be obtained and impacts would be mitigated in accordance with permit requirements.</p>
<ul style="list-style-type: none"> Policy 1.G.5: Preserve existing Kit Fox migration corridors adjacent to Jasper Sears Road, the California Aqueduct, Interstate I-5, and along designated utility corridors. 	<p>CONSISTENT. The project site is used by San Joaquin kit fox. The project would be required, as part of its federal incidental take permit, to minimize its impacts on kit fox movement across the site. In addition, the solar project design incorporates multiple pathways through the solar project site to facilitate wildlife movement and 4- to 6-inch gaps below the project fencing to allow for animal movement. The corridors would generally follow the four utility easements and one transmission line easement, and project infrastructure would be setback from these easements.</p>

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3.12 Mineral Resources

This section identifies and evaluates the project's potential impacts on mineral resources. This section also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site General Plan amendment are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. No questions or concerns related to mineral resources were raised in the responses to the NOP.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.12.1 Existing Conditions

Environmental Setting

Mineral Resource Zone (MRZ) classification is the process of identifying lands containing significant mineral deposits, based solely on geologic and economic factors without regard to existing land use or ownership. Five categories of mineral land classification have been developed for Merced County (California Department of Conservation 2021):

- **MRZ-1:** Areas where available geologic information indicates that little likelihood exists for the presence of significant concrete aggregate resources.
- **MRZ-2:** Areas where geologic information indicates the presence of significant concrete aggregate resources.
- **MRZ-3 cs:** Areas containing known or inferred concrete aggregate resources of undetermined mineral resource significance (crushed stone).
- **MRZ-3 sg:** Areas containing known or inferred concrete aggregate resources of undetermined mineral resource significance (sand and gravel).
- **MRZ-4:** Areas where available geologic information is inadequate to assign to any other mineral resource zone category.

Regional Setting

Merced County's primary mineral resources are sand and gravel, including substantial aggregate deposits concentrated along the San Joaquin River and its tributaries, such as the Merced River, within the Los Banos Alluvium, the Modesto Formation, and the San Luis Ranch, Patterson and Dos Palos alluviums. Approximately 38 square miles (or 24,320 acres) of aggregate have been identified in 10 aggregate resource areas within Merced County by the California Division of Mines and Geology. These 10 resource areas contain an estimated 1.18 billion tons of concrete resources overall (County of Merced [County] 2012).

Solar Project Site

The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming. The solar project site spans three mineral classifications, MRZ-1, MRZ-3 cs, and MRZ-3 sg, as shown in Figure 3.12-1. MRZ-1 indicates some portions of the solar project site have little likelihood of containing significant concrete aggregate resources. However, MRZ-3 cs and MRZ-3 sg indicate that other portions of the solar project site are likely to contain known or inferred concrete aggregate resources of undetermined mineral resource significance in the form of crushed stone, sand, and gravel (Parrish 2021). The County General Plan EIR does not identify any known significant sand or gravel resources within the solar project site (County 2012).

Although mineral resources could be present, the solar project site is not currently used for any mining or other mineral extraction activities.

PG&E Substation

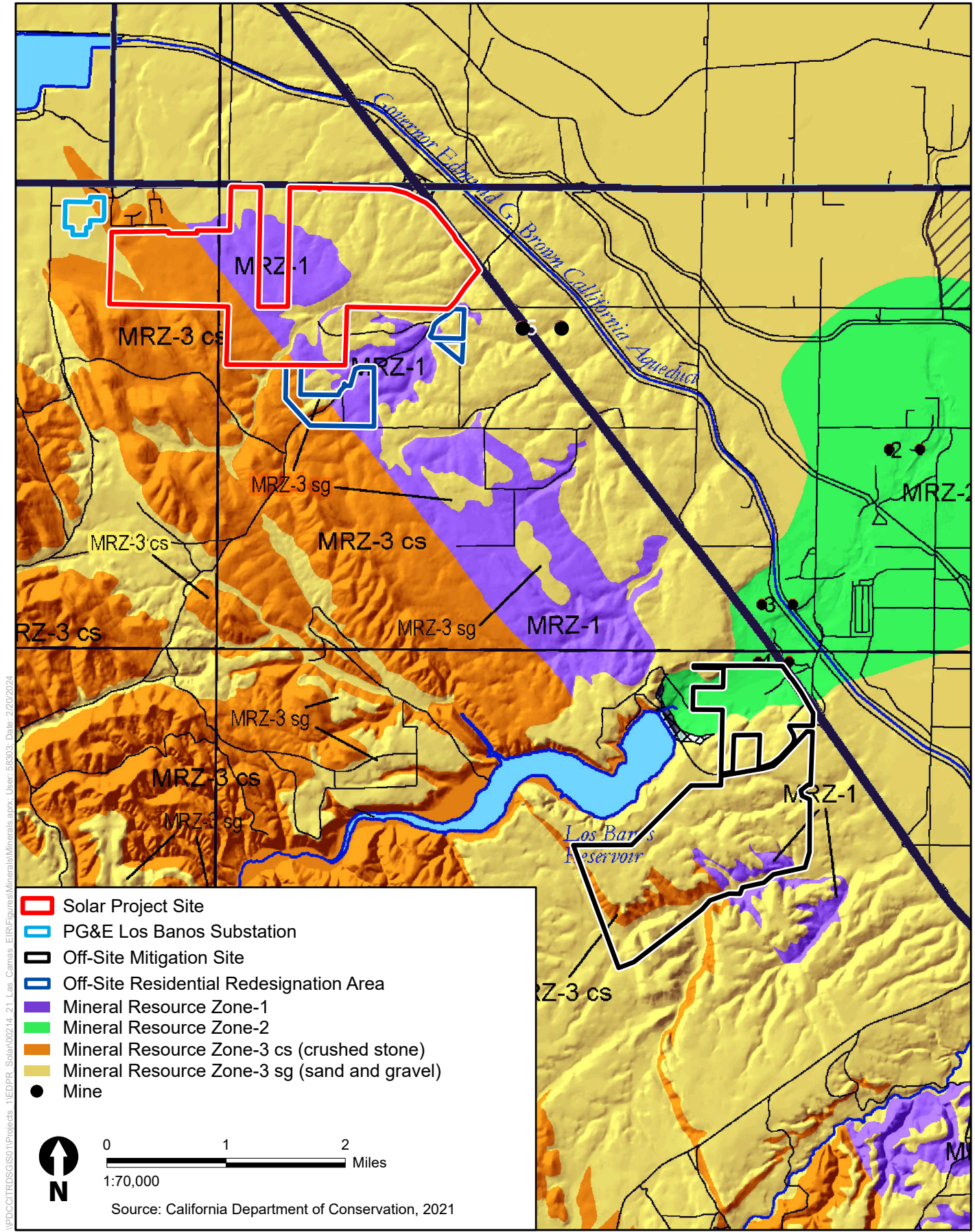
The PG&E substation area covers two mineral classifications, MRZ-3 cs and MRZ-3 sg, as shown in Figure 3.12-1 (Parrish 2021). This indicates the PG&E substation area is likely to contain known or inferred concrete aggregate resources of undetermined mineral resource significance in the form of crushed stone, sand, and gravel. Although mineral resources could be present, the PG&E substation is not currently used for any mining or other mineral extraction activities. In addition, the County General Plan EIR does not identify any known significant sand or gravel resources within the PG&E substation area (County 2012).

Off-Site Mitigation Site

The mineral resources within the off-site mitigation site are the same as described above for the solar project site and shown in Figure 3.12-1. However, the off-site mitigation site also includes an area classified as MRZ-2, which indicates the presence of significant concrete aggregate resources. Although mineral resources are most likely present, the off-site mitigation site is not currently used for any mining or other mineral extraction activities. In addition, the General Plan EIR does not identify any known significant sand or gravel resources within the off-site mitigation site (County 2012).

Off-Site Residential Redesignation Area

The mineral resources within the off-site residential redesignation area are the same as described above for the solar project site and shown in Figure 3.12-1. Although mineral resources could be present, the off-site residential redesignation area is not currently used for any mining or other mineral extraction activities. In addition, the County General Plan EIR does not identify any known significant sand or gravel resources within the off-site residential redesignation area (County 2012).



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**Figure 3.12-1
Mineral Resource Zones**

Regulatory Setting

State

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 (SMARA) (Public Resources Code [PRC] 2710–2796) encourages the production, conservation, and protection of the state’s mineral resources. PRC Section 2207 provides annual reporting requirements for all mines in the state, under which the State Mining and Geology Board is also granted authority and obligations. SMARA provides for the use of a system of MRZ classifications that reflect the known or inferred presence and significance of a given mineral resource. The MRZ classifications are based on available geologic information, including geologic mapping and other information on surface exposures, drilling records, and mine data, and on socioeconomic factors such as market conditions and urban development patterns.

Local

Merced County General Plan

The Natural Resources Element of the *2030 Merced County General Plan* (County 2013) contains the following goals and policies related to mineral resources:

- **Goal NR-3:** Facilitate orderly development and extraction of mineral resources while preserving open space, natural resources, and soil resources and avoiding or mitigating significant adverse impacts.
 - **Policy NR-3.5: Mineral Resource Protection (RDR).** Require areas identified with mineral deposits on either the State Mine Land Classification Maps provided by the State Mining and Geology Board's Classification Report, or site-specific information, remain protected for possible future mineral extraction. Impose conditions upon new incompatible land uses in areas surrounding identified mineral deposits for the purpose of mitigating significant land use conflicts prior to approving a use that would otherwise be incompatible with mineral extraction. The identified mineral deposit may be determined by the classification maps, Classification Report, separate County maps, or on a site-specific basis.

Villages of Laguna San Luis Community Plan

The project site is located within the Villages of Laguna San Luis Community Plan area. The following goals, policies, and objectives related to mineral resources from the community plan are applicable to the proposed project:

- **Objective 4.C:** Regulation of oil and gas exploration, extraction, and transportation as well as surface mining, the processing of mined minerals, and the reclamation of mined lands are enforced within urban development and areas planned for urban development.
- **Policy 4.C.2:** Utilize Merced County well drilling, surface mining, and reclamation ordinance procedures to regulate resource recovery and reclamation activities within the Villages CP.
- **Objective 4.D:** Establish controls for surface and subsurface mining operations to drill for and produce hydrocarbon substances so that such operations may be conducted in harmony with other uses of land.

- **Policy 4.D.1:** Protect residents in the enjoyment and use of their property by prohibiting surface and subsurface mining operations from being conducted in a manner that is detrimental to the health, safety, and welfare of residents or that constitutes a nuisance.
- **Policy 4.D.2:** Regulate surface and subsurface mining operations in a manner that minimizes the potential impact on mineral rights owners.

3.12.2 Environmental Impacts

This section describes the proposed project's potential impacts on mineral resources. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

Methods for Analysis

Criteria from Appendix G of the CEQA Guidelines were used to determine whether the proposed project would have a significant impact related to mineral resources. Impacts were assessed qualitatively based on review of applicable data from the California Department of Conservation, U.S. Geological Survey, and applicable area general plans and other available reports and studies.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

Would the project:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
- 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?

Impacts Not Evaluated in Detail

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 noted above, The County General Plan EIR does not identify any known significant sand or gravel resources within the project site. The project would result in ***no impact*** related to locally important mineral resources, and this impact is not evaluated further.

Impacts and Mitigation Measures

Impact MIN-1: 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? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts on mineral resources that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.3-7 on pages 5.3-31 and 5.3-32 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that no impacts on mineral resources would result because such resources do not occur in quantities that would be large enough for economical extraction. As described above, newer mapping by the California Department of Conservation has mapped mineral resources zones on the project site. The assessment below is based on this information.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and community plan and an associated Zone Change for the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; installation of communication equipment, electrical distribution/transmission infrastructure, and substation equipment; development of public utility facilities; and construction of ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to redesignate roughly 202.8 acres south of the solar project site from low density residential use to high-density/medium-density residential use.

A high-density/medium-density residential use of the off-site residential redesignation area instead of a low-density residential use would not change the impacts on the environment that could occur from future development because the same lands would be disturbed. Although newer mapping by the California Department of Conservation has mapped mineral resources zones on the off-site residential redesignation area since adoption of the Community Plan, the area is not currently used for any mining or other mineral extraction activities, as was the case when the Community Plan EIR was prepared. Therefore, based on newly available information, the off-site residential redesignation would have a less-than-significant impact, which would be greater than the no-impact conclusion in the Community Plan EIR. Notwithstanding, **no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.**

Construction

The majority of the solar project site is classified as MRZ-3 cs and MRZ-3 sg, indicating the area contains known or inferred concrete aggregate resources, but of undetermined significance. Solar project construction would disturb a total of approximately 1,287 acres, including temporary

ground disturbance of 1,229 acres and permanent ground disturbance of 48.51 acres. In addition, approximately 0.1 acre would be permanently disturbed to construct a 230-kilovolt transmission gen-tie line to connect the solar project to the PG&E substation. Temporary ground disturbance during construction would include temporary staging and laydown areas, grading, earthwork, and trenching. Grading would be needed in some areas to achieve the solar panel design standard of 5 to 15 percent maximum slope for north and south aspects. Earthwork would focus on cut and engineered fill as necessary to create finished grade slopes suitable for panel installation. Graded areas would be cleared and grubbed; vegetative material would be stockpiled on-site and distributed back onto disturbed surfaces once grading is complete. Trenching would be required for wires to be buried underground.

Permanent ground disturbance would include areas affected by roads, parking, battery storage facilities, fencing, and solar photovoltaic installation. In total, approximately 50 acres of land would be affected by grading activities for roads, parking, battery storage facilities, solar project substation, fencing, laydown yard, and solar PV installation, among other improvements.

All activities involving temporary and permanent ground disturbance have the potential to uncover mineral resources, potentially exposing them to erosion and thus loss to the region and state. In addition, permanent ground-disturbing activities that place structures on potentially mineral-rich areas can also result in the loss of availability of minerals by limiting future access. However, this loss of mineral resources during temporary and permanent ground-disturbing activities is expected to be minor because temporarily disturbed land would be restored following construction. In addition, the overall area of permanent ground disturbance would be only 1.9 percent of the total solar project site. Furthermore, the solar project site is not currently used for any mining or other mineral extraction activities. Therefore, based on newly available information, construction of the solar project would have a less-than-significant impact, which would be greater than the no-impact conclusion in the Community Plan EIR. Notwithstanding, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

Once the solar project site is operational, no additional impacts on mineral resources would occur because construction activities would have disturbed them, if present. Operation of the solar project would not involve any additional ground-disturbing activities that could affect mineral resources, although the solar project site would be made unavailable for mining or other mineral extraction activities. For the reasons stated above in the construction analysis, based on newly available information, operation of the solar project would have a less-than-significant impact, which would be greater than the no-impact conclusion in the Community Plan EIR. Notwithstanding, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning and site reclamation of the solar project site would begin immediately after the 35-year lifespan of the solar project, expected in 2060. Thus, the mineral resources, if present, would become available to the region and state at that time. No impact would occur, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site that is outside of the Community Plan boundary is mapped as MRZ-3 sg (sand and gravel). As described above, ground disturbing activities associated with construction and operation of the solar project would not result in the permanent loss of availability of these mineral resources. For the reasons stated above, construction and operation of the solar project outside the Community Plan boundary would have a less-than-significant impact, which would be greater than the no-impact conclusion in the Community Plan EIR. Notwithstanding, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Off-Site Mitigation Site

The project would establish an off-site mitigation site of approximately 1,498 acres of grassland habitat. The habitat area would be placed into a conservation easement in perpetuity and managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. It would continue to be grazed or mowed. Rodenticide usage would be prohibited. Targeted invasive plant management activities would be necessary to prevent invasion by pest plant species.

Because the purpose of the off-site mitigation site is to preserve land containing natural resources, no mining activities are expected to occur. Therefore, if valuable mineral resources are located within the off-site mitigation site, they would be unavailable or lost to the region or state.

However, the amount of mineral resources that may become unavailable or lost would be very small in relation to the total amount of mineral resources present within Merced County. Furthermore, the off-site mitigation site is not currently used for any mining or other mineral extraction activities. Therefore, the off-site mitigation site would have a less-than-significant impact, which would be greater than the no-impact conclusion in the Community Plan EIR. Notwithstanding, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The PG&E substation improvements would result in a permanent ground disturbance of approximately 10.3 acres located adjacent to the southwest corner of the PG&E substation fence line, within PG&E property. The PG&E substation area covers two mineral classifications, MRZ-3 cs and MRZ-3 sg. Construction equipment for the PG&E substation improvements would be staged within the existing substation footprint or the area subject to the improvements and would not require additional temporary ground disturbance outside of the improvement area. Given the very small amount of permanently disturbed land and the undetermined significance of the mineral resources, it is unlikely mineral resources, if present, would be lost to the region and state. Furthermore, the PG&E substation is not currently used for any mining or other mineral extraction activities. Therefore, the PG&E substation improvements would have a less-than-significant impact, which would be greater than the no-impact conclusion in the Community Plan EIR. Notwithstanding, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, when considering the whole of the proposed project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, the project would have a less-than-significant impact, which would be greater than the no-impact conclusion in the Community Plan EIR. Notwithstanding, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

3.12.3 References Cited

Printed References

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3.13 Noise

This section identifies and evaluates the project's potential impacts on noise and vibration, including construction and operational noise and vibration. This section also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site General Plan amendment are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Relevant technical documentation used in this analysis includes:

- *Noise Technical Report for the Las Camas Solar Project* (ICF 2024) (Appendix 3.13-1)

No questions or concerns related to noise and vibration effects on humans were raised in the responses to the notice of preparation (NOP). One comment raised concerns about vibration effects on biological resources. These effects are addressed in Section 3.4, *Biological Resources*, of this EIR.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this EIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.13.1 Existing Conditions

Environmental Setting

Regional Setting

Solar Project Site

The area surrounding the project is rural in character, with small pockets of development located nearby. A residential subdivision, a recreational vehicle (RV) park, a commercial area, and the PG&E substation are located at the junction of SR-33 and SR-152, which is north of the western portion of the solar project site. Individual residences are located around other portions of the solar project site but at greater distances than the aforementioned residential pocket north of the western extent of the solar project site. The lands immediately east of I-5 support orchards, grazing, and dry farming. Farther east, irrigated agriculture is the primary land use. The community of Santa Nella, to the north, and city of Los Banos, to the east, are several miles from the solar project site.

The solar project site is located on roughly 1,741 acres of undeveloped, privately owned land (solar project site) located approximately 3 miles southeast of the community of Santa Nella, California; 6 miles west of the city of Los Banos; and approximately 30 miles southwest of the city of Merced. The site is at the southwest corner of the intersection of State Route (SR) 33/SR-152 and Interstate (I) 5; it can be accessed via Billy Wright Road from SR-33/SR-152.

The solar project site is undeveloped, consisting predominantly of nonnative annual grassland. Elevations on the solar project site range from approximately 220 feet above sea level at the lowest point to 558 feet at the highest point. The topography is mostly flat or gently rolling; steeper slopes are clustered near the southwest corner of the site and along a riverine feature in the southern portion of the solar project site. Three 230 kV transmission lines and one 69 kV transmission line run north-south through the solar project site and intersect at the western corner of the site.

Land Use Redesignation and Rezoning Area

The off-site residential redesignation area consists of 202.8 acres located immediately south of the solar project site, west of I-5, and south of SR-33/SR-152 off Billy Wright Road. At present, the off-site residential redesignation area is primarily used for active and fallowed agricultural production (e.g., alfalfa, hay, oats, vineyards, orchards) and grazing land for cattle and sheep..

Off-Site Mitigation Site

The approximately 1,498-acre off-site mitigation site is proposed near the eastern and southern edges of Los Banos Reservoir. The site is located west of I-5 and more than 3.5 miles southeast of the solar project site.

PG&E Substation

PG&E's Los Banos substation is approximately 0.2 mile west of the solar project site. The substation equipment is located within a footprint of approximately 37 acres within the substation fence.¹

Regulatory Setting

State

California Public Utilities Commission General Order 131-D

The PG&E substation is under the jurisdiction of the California Public Utilities Commission (CPUC). CPUC General Order 131-D 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 the [CPUC]'s jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters..." As a result, the PG&E substation improvements (but not the proposed solar project) would be exempt from local land use and zoning regulations, including noise ordinances and standards.

¹ As measured on Google Earth.

California Governor’s Office of Planning and Research

The *State of California General Plan Guidelines*, published and updated by the Governor’s Office of Planning and Research, provides guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. These are guidelines for general land use planning that describe noise acceptability categories for different types of land uses. California also requires each local government entity to perform noise studies and implement a noise element as part of its general plan. The purpose of the noise element is to limit the exposure of the community to excessive noise levels; the noise element must be used to guide decisions concerning land use. A discussion of relevant noise-related policies in the *2030 Merced County General Plan* (Merced County 2013) is provided below. (Note that the solar project site is within the jurisdiction of Merced County, whereas the PG&E substation is within the jurisdiction of the CPUC.)

California Department of Transportation

There are no state vibration standards that apply directly to the proposed project. As noted below, there are also no quantitative local standards for construction-related vibration from the Project. However, the California Department of Transportation (Caltrans) has published guidance that provides ground-borne vibration criteria that are useful in establishing thresholds for impact determinations. Specifically, Caltrans’ widely referenced *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020) provides guidance for two types of potential impact: (1) damage to structures and (2) annoyance to people. Guideline criteria for each are provided in Tables 3.13-1 and 3.13-2. Although the proposed project would not be subject to Caltrans oversight, these criteria are used for purposes of this analysis, in the absence of other applicable regulatory requirements.

Table 3.13-1. Caltrans Guideline Vibration Damage Criteria

Structure and Condition	Maximum Peak Particle Velocity (PPV) (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans. 2020.

Notes: Transient sources create a single, isolated vibration event, such as blasting or the use of drop balls.

Continuous/frequent intermittent sources include pile drivers (impact and vibratory), crack-and-seat equipment, and vibratory compaction equipment.

Table 3.13-2. Caltrans Guideline Vibration Annoyance Criteria

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: Caltrans. 2020.

Notes: Transient sources create a single, isolated vibration event, such as blasting or the use of drop balls. Continuous/frequent intermittent sources include pile drivers (impact and vibratory), crack-and-seat equipment, and vibratory compaction equipment.

Local

The proposed solar project would be subject to local noise regulations provided by the Merced County Noise Ordinance and the Merced County General Plan. As noted above, the PG&E substation improvements are under the sole jurisdiction of the CPUC and would be exempt from local regulations. Nevertheless, because the CPUC does not provide any specific noise regulations, the local noise regulations are used to develop thresholds of impact for the purposes of identifying significant impacts under CEQA for both the solar project and the PG&E substation improvements.

Merced County Noise Ordinance

Chapter 10.60, Noise Control, of the Merced County Code (MCC) establishes sound level limits for any property within the unincorporated area of the county. Specifically, Section 10.60.030, Sound Level Limitations, of the MCC outlines the sound level limits in the county. The relevant portions of this section of the MCC are cited below.

- A. No person shall cause, suffer, allow, or permit the operation of any sound source on private property in such a manner as to create a sound level that results in any of the following, when measured at or within the real property line of the receiving property:
 1. Exceeds the background sound level by at least ten (10) dBA during daytime hours (7:00 a.m. to 10:00 p.m.) and by at least five (5) dBA during nighttime hours (10:00 p.m. to 7:00 a.m.). The background sound level for purposes of this section shall be determined as set forth in Section 10.60.060 (sound measurement procedures); or
 2. Sixty-five (65) dBA L_{dn} on residential real property or seventy (70) dBA L_{dn} on nonresidential real property; or
 3. Seventy-five (75) dBA L_{max} on residential real property or eighty (80) dBA L_{max} on nonresidential real property.

Because the MCC defines “ambient sound level” as the total sound pressure in the area of interest, including the noise source of interest, it is assumed that noise increases over background ambient levels should be quantified, based on the average noise level (L_{eq}) over the period of interest. Note that noise from construction activity is exempt from these limitations under MCC Section 10.60.030(B), provided that it is limited to the daytime hours between 7:00 a.m. and 6:00 p.m. and all construction equipment is properly muffled and maintained.

Nighttime construction is prohibited between 6:00 p.m. and 7:00 a.m., except for emergency work or when the sound level does not exceed any applicable relative or absolute limits specified above.

It is noted that much of the information described above is reiterated as part of Merced County's Zoning Code in Chapter 18.40, *Performance Standards*, of the MCC.

Merced County General Plan

The *Merced County General Plan Health and Safety Element* (Merced County 2013) contains policies and guidelines that pertain to noise in the county. In addition, noise level standards are included in the general plan to quantify noise effects in the county. Table 3.13-3 shows the noise level standards for noise-sensitive areas affected by traffic, railroad, and airport noise in the county.

Table 3.13-3. Merced County Noise Standards for New Uses Affected by Traffic, Railroad, and Airport Noise

New Land Use	Sensitive¹ Outdoor Area – L_{dn}	Sensitive Interior² Area – L_{dn}	Applicable Notes
All residential	65	45	3
Transient lodging	65	45	3,4
Hospitals and nursing homes	65	45	3,4,5
Theaters and auditoriums	—	35	4
Churches, meeting halls, schools, libraries, etc.	65	40	4
Office buildings	65	45	4
Commercial buildings	—	50	4
Playgrounds, parks, etc.	70	—	—
Industry	65	50	4

Source: Merced County 2013

Notes:

- ¹ "Sensitive Outdoor Area" includes primary outdoor activity areas associated with any given land use at which noise sensitivity exists as well as locations where a county's exterior noise level standards are applied.
- ² "Sensitive Interior Area" includes any interior area associated with any given land use at which noise sensitivity exists as well as locations where a county's interior noise level standards are applied. Examples of sensitive interior spaces include, but are not limited to, all habitable rooms of residential and transient lodging facilities, hospital rooms, classrooms, library interiors, offices, worship spaces, and theaters. Interior noise level standards are applied within the noise-sensitive areas of the various land uses with windows and doors in the closed position.
- ³ Railroad warning horn usage shall not be included in the computation of L_{dn}.
- ⁴ Only the interior noise level standard shall apply if there are no sensitive exterior spaces proposed for these uses.
- ⁵ Because hospitals are often noise-generating uses, the exterior noise level standards are applicable only to clearly identified areas designated for outdoor relaxation by either hospital personnel or patients.

Table 3.13-4 shows the interior and exterior noise level standards for noise-sensitive areas affected by existing non-transportation noise sources in the County. In addition to these standards, the policies in this section address ways to reduce or eliminate existing and future conflicts between land uses and noise.

Table 3.13-4. Non-Transportation Noise Standards Median (L₅₀) /Maximum (L_{max})¹

Receiving Land Use	Outdoor Area ²		Interior ³		Applicable Notes
	Daytime	Nighttime	Day or Night		
All residential	55/75	50/70	35/55		—7
Transient lodging	55/75	—	35/55		4, 7
Hospitals and nursing homes	55/75	—	35/55		5, 6, 7
Theaters and auditoriums	—	—	30/50		6, 7
Churches, meeting halls, schools, libraries, etc.	55/75	—	35/60		6, 7
Office buildings	60/75	—	45/65		6, 7
Commercial buildings	55/75	—	45/65		6, 7
Playgrounds, parks, etc.	65/75	—	—		6, 7
Industry	60/80	—	50 /70		6, 7

Source: Merced County 2013

Notes:

- ¹ These standards shall be reduced by 5 dB for sounds consisting primarily of speech or music as well as recurring impulsive sounds. If the existing ambient noise level exceeds the standards in this table, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.
- ² “Sensitive Outdoor Area” includes primary outdoor activity areas associated with any given land use at which noise sensitivity exists as well as locations where a county’s exterior noise level standards are applied.
- ³ “Sensitive Interior Area” includes any interior area associated with any given land use at which noise sensitivity exists as well as locations where a county’s interior noise level standards are applied. Examples of sensitive interior spaces include, but are not limited to, all habitable rooms of residential and transient lodging facilities, hospital rooms, classrooms, library interiors, offices, worship spaces, and theaters. Interior noise level standards are applied within noise-sensitive areas of the various land uses with windows and doors in the closed positions.
- ⁴ Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
- ⁵ Because hospitals are often noise-generating uses, the exterior noise level standards are applicable only to clearly identified areas designated for outdoor relaxation by either hospital personnel or patients.
- ⁶ The outdoor activity areas (if any) of these uses are not typically used during nighttime hours.
- ⁷ Where median (L₅₀) noise level data are not available for a particular noise source, average (L_{eq}) values may be substituted for the standards of this table, provided the noise source operates for at least 30 minutes. If the source operates less than 30 minutes, the maximum noise level standards shown shall apply.

The following policies from the *Merced County General Plan* pertain to the solar project:

- **Policy HS-7.1: Noise Standards for New Land Uses:** Require new development projects to meet the standards shown in Tables HS-1 and HS2 [Tables 3.13-3 and 3.13-4 in this document], at the property line of the proposed use, through either project design or other noise mitigation techniques.
- **Policy HS-7.4: New Noise or Ground-borne Vibration Generating Uses:** Require new commercial and industrial uses to minimize encroachment on incompatible noise or ground-borne vibration sensitive land uses. Also consider the potential for encroachment by residential and other noise or ground-borne vibration sensitive land uses on adjacent lands that could significantly impact the viability of the commercial or industrial areas.
- **Policy HS-7.5: Noise-Generating Activities:** Limit noise generating activities, such as construction, to hours of normal business operation.
- **Policy HS-7.7: Noise- or Vibration-Impacted Residential Area Monitoring:** Consider any existing residential area “noise or vibration impacted” if the exposure to exterior noise exceeds the standards shown in Table HS-2 [Table 3.13-4 in this document] or if ground-borne vibration levels exceed 70 VdB. Identify and evaluate potential noise- or ground-borne-vibration-impacted areas and identify possible means to correct the identified noise/land use incompatibilities.

- **Policy HS-7.12: New Project Noise Mitigation Requirements:** Require new projects to include appropriate noise mitigation measures to reduce noise levels in compliance with the Table HS-2 [Table 3.13-4 in this document] standards within sensitive areas. If a project includes the creation of new non-transportation noise sources, require the noise generation of those sources to be mitigated so they do not exceed the interior and exterior noise level standards of Table HS-2 at existing noise-sensitive areas in the project vicinity. However, if a noise-generating use is proposed adjacent to lands zoned for residential uses, then the noise generating use shall be responsible for mitigating its noise generation to a state of compliance with the standards shown in Table HS-2 at the property line of the generating use in anticipation of the future residential development.

The Villages of Laguna San Luis Community Plan

The solar project site includes approximately 1,180 acres of land designated as Urban Community under the Villages of Laguna San Luis Community Plan (2008). The Community Plan contains various objectives, policies, and implementation measures related to noise. These are primarily concerned with land use planning to ensure new noise-sensitive land uses are adequately protected from current or projected noise levels. The following policies from the Villages of Laguna San Luis Community Plan may be relevant to noise from the proposed project:

- **Land Use Plan, Policy 4.A.1:** Reduce visual and noise impacts of commercial and industrial uses on adjacent residential properties and neighborhoods by incorporating grading, landscaping, and other design treatments to screen parking, refuse storage, utility and other activity areas.
- **Land Use Plan, Policy 4.A.6:** Avoid incompatibility conflicts between the major PG&E substation and adjacent land uses.
- **Land Use Plan, Policy 4.E.1:** Residential and other noise sensitive land uses shall not be located in areas exposed to current or projected noise levels that exceed 65 dBA L_{dn} , or other community noise standards established in the General Plan Noise Chapter.
- **Land Use Plan, Policy 4.E.2:** Measures to buffer or screen noise sources are designed in an efficient and visually responsible manner.
- **Community Design Plan, Policy 1.D.3:** To the extent feasible, utilize vegetation and earth forms rather than sound walls along collector and arterial roadways to buffer residential land uses from the effects of traffic and for noise attenuation.
- **Community Design Plan, Policy 1.H.1:** Measures to promote the use of landscaping in developments which reduces heat, glare, and noise, aids in the percolation of stormwater; improves air quality; and buffers potentially incompatible land uses from one another.
- **Community Design Plan, Policy 4.A.1:** Landscaped earthen berms, or combinations of berms, vegetation, and walls rather than walls alone shall be used to mitigate roadway noise impacts such that residential development is not exposed to exterior noise levels that exceed 65 dBA L_{dn} . And interior noise levels that exceed 45 dBA L_{dn} . Noise walls, especially in residential areas, should not exceed 7 feet in height, but wall/berm combinations will be permitted within the Villages Specific Urban Development Plan that exceed 7 feet height (maximum 7 feet for the wall).
- **Community Design Plan, Policy 4.A.2:** Where feasible locate non-residential land uses in noise impacted areas to reduce the need for sound walls and other noise reduction measures.

3.13.2 Environmental Impacts

This section describes the proposed project’s potential impacts on noise. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

In the context of an environmental noise and vibration assessment, the terms *receptor* and *receiver* are often used interchangeably. However, in this section, they are used to mean slightly different things. The term *receptor* is used to present a general discussion of acoustic concepts and describe noise-sensitive uses in the study area. The term *receiver* describes a specific geographical point used in the analysis to calculate noise levels. Each receiver may be representative of one or more nearby receptors.

As discussed in Chapter 2, *Project Description*, water for project construction and operation would either be supplied by the San Luis Water District (SLWD) through existing connections to the solar project site or transported to the solar project site via 4,000-gallon water trucks from the Mid-Cal well located adjacent to SR 33 at the northwest corner of AKT’s Mid-Cal property, approximately 4.4 miles north of the solar project site. The method that is ultimately implemented will depend on which approvals are granted. For purposes of the noise analysis, the Mid-Cal well option is assumed because it would represent a worst-case analysis due to the required truck trips.

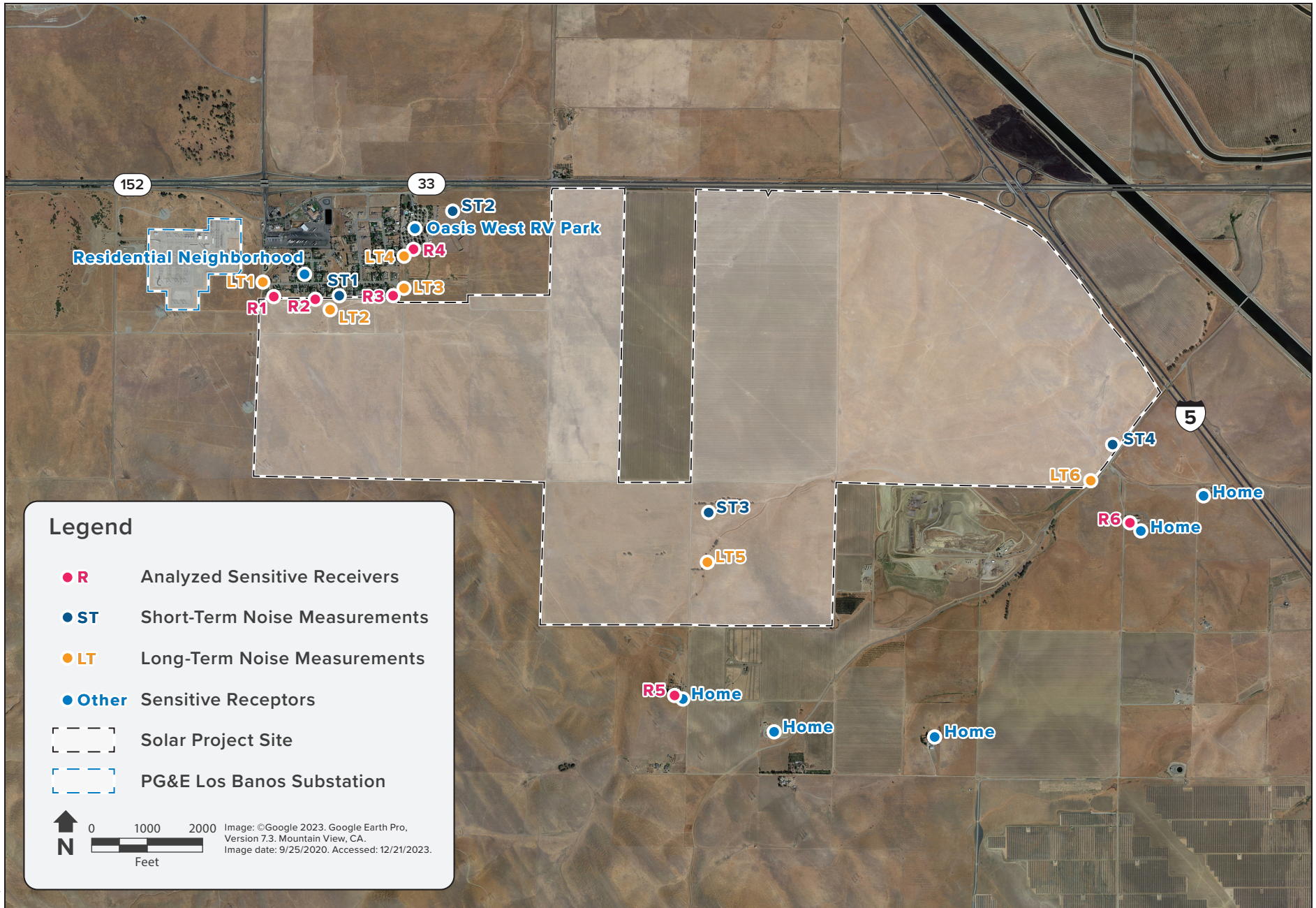
Methods for Analysis

Analyzed Receiver Locations

Sensitive receptors in the project area consist of residential dwellings in various directions from the project site. Given the size of the project site and the large range of distances to the surrounding receptors, project noise and vibration levels were not calculated for every individual dwelling. Rather, the impacts were analyzed using a subset of six receivers that represent the closest receptors in each direction from the project site, as illustrated in Figure 3.13-1. Aside from being chosen for the purpose of depicting the potential worst-case noise and vibration levels that would be experienced, these analyzed receivers account for the range of ambient noise levels measured in the project vicinity, which is critical to determining noise impacts relative to existing noise levels. Receiver R1 represents the closest home to the proposed PG&E substation improvements and is used specifically to assess impacts from that element of the project. All other receivers (i.e., R2 through R6) are evaluated to assess impacts from the solar project. The receivers and the corresponding noise measurements used to establish baseline noise measurements are summarized in Table 3.13-5.

Table 3.13-5. Analyzed Receiver Locations and Corresponding Baseline Noise Measurements

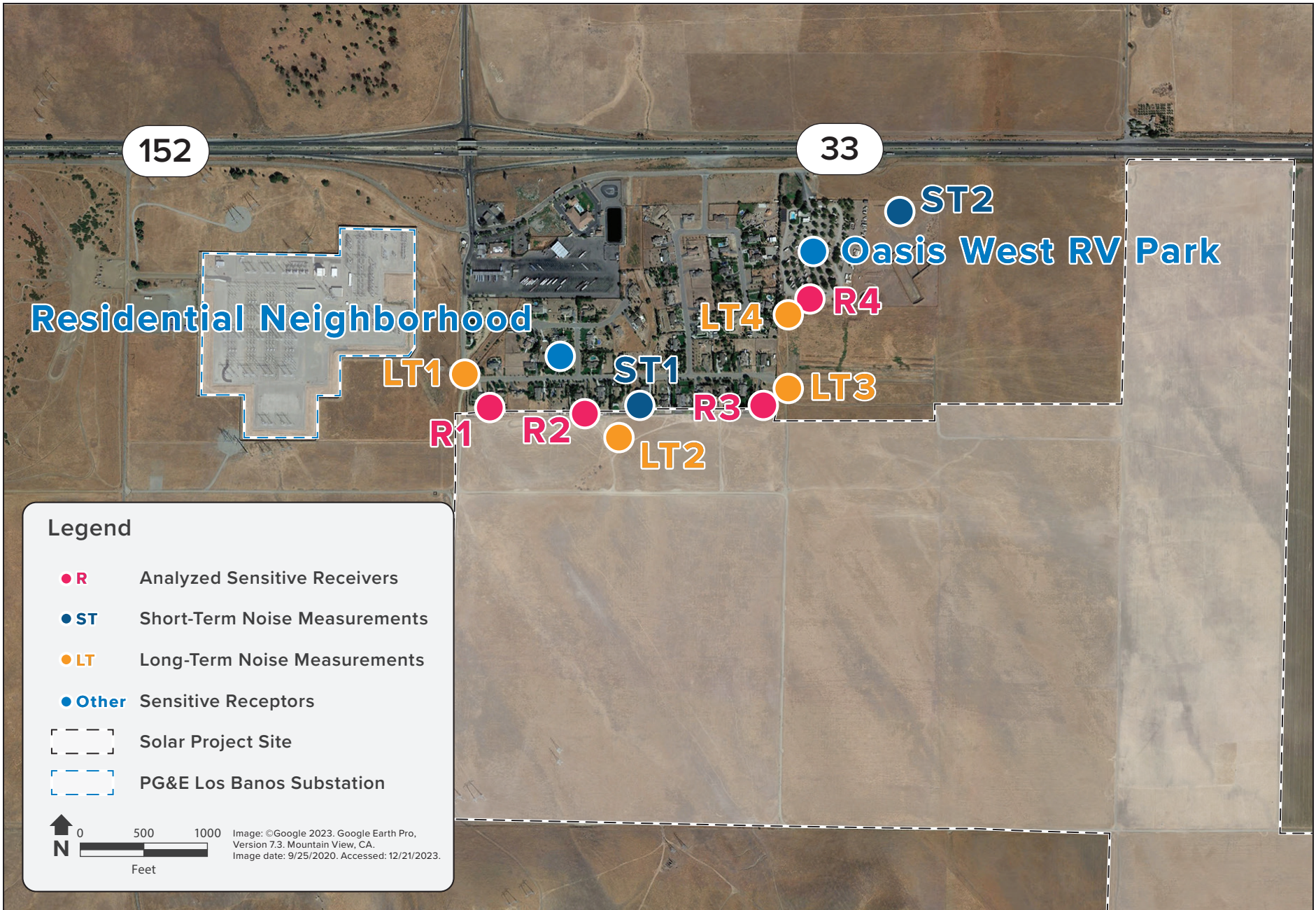
Receiver Number	Location	Corresponding Baseline Noise Measurement Location
R1	28971 W. Vista Grande Drive, east of substation improvements	LT2
R2	28807 W. Vista Grande Drive, northwest of project site	LT2
R3	28541 W. Vista Grande Court, northwest of project site	LT3
R4	Oasis West RV Park, northwest of solar project site	LT4
R5	Home at 17535 Billy Wright Road, south of solar project site	LT5
R6	17001 Billy Wright Road, southwest of solar project site	LT6



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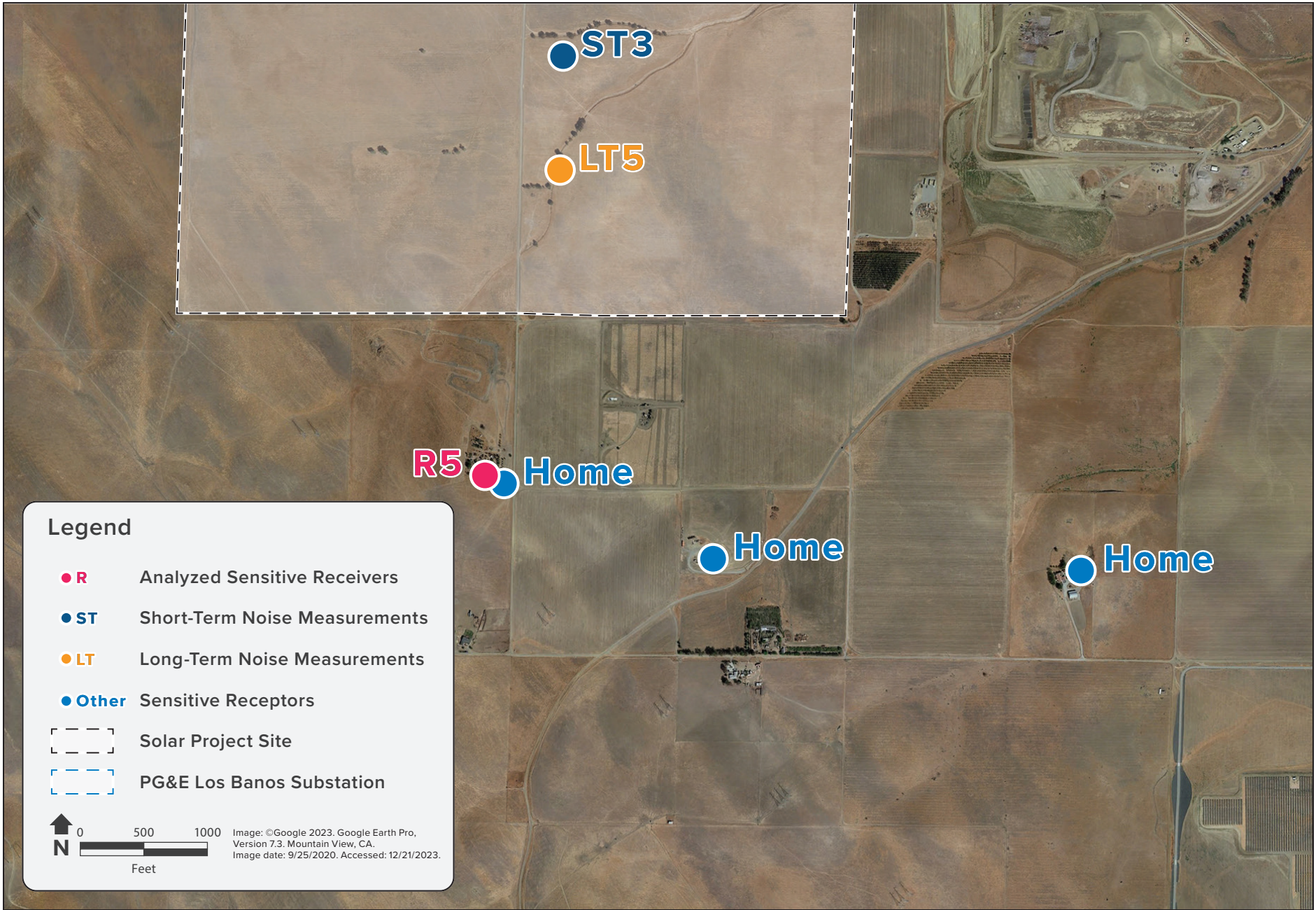
Figure 3.13-1a
Sensitive Receptor and Noise Measurement Location Map



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Figure 3.13-1b
Sensitive Receptor and Noise Measurement Location Map



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Figure 3.13-1c
Sensitive Receptor and Noise Measurement Location Map



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Figure 3.13-1d
Sensitive Receptor and Noise Measurement Location Map

Construction Noise

A combination of existing literature and industry-accepted or standard noise prediction and propagation algorithms was used to predict short-term construction noise levels. Specifically, construction-related noise was analyzed using data and modeling methodologies from the Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (RCNM) (2008), which predicts average noise levels at nearby receptors by analyzing the type of equipment, the distance from source to receptor, usage factor (i.e., the fraction of time the equipment is operating in its noisiest mode), and the presence or absence of intervening shielding between source and receptor. This methodology calculates the composite average noise levels for the multiple pieces of equipment scheduled for use during each construction phase of the proposed project. In addition, the evaluation of potential noise impacts associated with project construction was based on the construction schedule, phasing, and equipment assumptions provided by the project applicant. Construction noise levels were predicted by assuming an average noise attenuation rate of 6 dB per doubling of distance from the source. The average hourly construction noise level (i.e., hourly L_{eq}) generated during each phase of construction was calculated at a reference distance of 50 feet. The reference noise levels were then adjusted for analyzed receivers, based on the distance between receivers and each construction activity.

Details of the construction equipment and phasing considered for the proposed project, including the solar project site and the PG&E substation improvements, are provided in the *Impacts and Mitigation Measures* subsection of this chapter.

The source-to-receiver distances used to estimate the project's construction noise levels at each analyzed receiver considered either the closest distance to the residential dwelling or, to reflect the assumed distribution of equipment across the active construction area, the acoustical average distance between the construction area and the dwelling.² Most construction would take place during daytime hours, as defined in the MCC. However, some limited work may take place between 6:00 p.m. and 8:00 p.m. Although evening work is not currently proposed, if work falls behind schedule, construction activities that generate low noise levels may extend past the typical daily end time of 6:00 p.m. but no later than 8:00 p.m. on a worst-case day when evening work is required. Construction-related activities that may occur during evening hours include delivery offloads, panel laying, and cable laying and termination. Note that evening activities would not take place in proximity to the nearest off-site residences. However, to ensure a conservative assessment, this analysis assumes that evening work could occur anywhere on the solar project site. The closest distance between activities and receivers was used for the analysis of evening construction noise effects (as opposed to the acoustical average distance).

To provide a quantitative estimate of construction noise levels at analyzed receivers, it was necessary to assign construction activities to a defined work area and estimate acoustical average distances between construction activities and receivers. The smaller the assumed work area, the more conservative the analysis because it implies construction equipment will be more tightly concentrated, leading to higher noise levels at the nearest receptors. Based on the total project site area (1,741 acres) and the anticipated duration of construction (14 months), the average daily construction acreage would be approximately 5.7 acres.³ To provide a slightly more conservative assumption, daytime construction activities were assumed to occur at the solar project site within an approximately 4-acre area near each receiver on a given day for a given activity. It should be noted that the use of a 4-acre daily construction area is meant to serve

² The acoustical average distance is used to represent noise sources that are mobile or distributed over an area (such as the analyzed construction area); it is calculated by multiplying the shortest distance between the receiver and the noise source area by the farthest distance and then taking the square root of the product.

³ 14 months \approx 426 days, or 304 workdays (assuming 5 days per week). $1,741 \text{ acres} / 304 \text{ days} = 5.7 \text{ acres/day}$

as a reasonable estimate, thereby allowing for a quantitative assessment. It is not intended to place any restrictions on the actual daily acreage where construction activities may occur at the solar project site.

Given the nature of construction activities, the size of the active construction area would fluctuate on a daily basis, depending on the types of activities and equipment involved. The actual construction area may be greater or smaller than 4 acres. However, although multiple construction phases at different locations within the solar project site may occur concurrently on a given construction day, the localized nature of noise is such that noise levels generated over a construction area near a given receiver would dominate the noise environment compared with noise levels generated at a more distant location. Therefore, estimated noise levels from the nearest 4-acre construction area at a given receiver, especially during the loudest construction phases of the proposed project, would be representative of the noise exposure at that receiver during project construction.

The distance from the nearest receiver to the closest edge of the 4-acre daily construction area was measured, as was the distance from the nearest receiver to the farthest edge of the approximately 4-acre daily construction area. The acoustical average distance was then calculated from these two values.

For construction of the PG&E substation improvements, construction equipment was assumed to be distributed across the substation property within the adjusted fence line. The calculation of the acoustical average distance was based on the nearest and farthest boundaries of the substation improvement area.

During project construction, noise levels would also be generated by construction-related traffic associated with workers' trips and haul trucks on local roadways. The analysis of roadway noise levels from project construction traffic was conducted with the use of a proprietary traffic noise model; calculations were based on data from the FHWA Traffic Noise Model (FHWA 2004). This model allows for the calculation of noise levels at specific distances from the center of a roadway, based on traffic volumes, average speeds, and site environmental conditions. Using this model, roadway noise levels from project construction were estimated and compared to existing (i.e., without project construction) modeled traffic noise levels as well as measured ambient noise levels. Construction-related traffic data were obtained from project's traffic impact analysis (KD Anderson & Associates, Inc. 2022).

Construction Vibration

A combination of existing literature and industry-accepted or standard vibration prediction and propagation algorithms was used to predict short-term construction vibration levels. Specifically, construction-related vibration resulting from the proposed project was analyzed using data and modeling methodologies provided by Caltrans' *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020). This guidance manual provides typical vibration source levels for various types of construction equipment as well as methods for estimating the propagation of ground-borne vibration over distance. The evaluation of construction vibration was based on the construction schedule, phasing, and equipment assumptions provided by the project applicant. Table 3.13-6 provides PPV levels for the construction equipment expected to be used for the proposed project; the levels are provided at a reference distance of 25 feet. All of the analyzed equipment is classified as continuous/frequent intermittent vibration sources. The solar panels are assumed to be installed with the use of a post driver (essentially, a small pile driver). The PPV level for this equipment was calculated using methods provided in Caltrans' guidance manual (Caltrans 2020), as presented in Table 3.13-6.

Table 3.13-6. Construction Equipment Vibration Levels

Equipment Item	Reference PPV at 25 feet, in/sec¹
Vibratory roller	0.210
Post driver ²	0.161
Auger drill	0.089
Large bulldozer ³	0.089
Loaded trucks (on rough terrain)	0.076
Small bulldozer ⁴	0.003

Source: Caltrans 2020, except as noted.

1. Obtained from Caltrans 2020.

2. Ambient Air Quality & Noise Consulting. 2015. Calculation based on a reference PPV level of 0.65 in/sec for a 36,000-foot-pound pile driver and a maximum energy level of 2,200 foot-pounds for post drivers.

3. Considered representative of other heavy earthmoving equipment such as excavators, graders, backhoes, etc.

4. Considered representative of smaller equipment such as small skid steers and mini excavators.

The following equation from the guidance manual was used to estimate the change in PPV levels over distance:

$$PPV_{rec} = PPV_{ref} \times (25/D)^n$$

where PPV_{rec} is the PPV at a receptor; PPV_{ref} is the reference PPV at 25 feet from the equipment; D is the distance from the equipment to the receptor, in feet; and n is a value related to the vibration attenuation rate through ground (the default recommended value for n is 1.1). This equation was used to estimate the PPV at each of the closest vibration-sensitive receptor, based on the worst-case (closest) distance between each source and receptor.

Operational Noise

The primary operational noise sources associated with the solar project would be the BESS, electrical inverters and/or converters, and solar project substation. The solar project substation would have the same general configuration and location regardless of whether the AC Option or DC Option is selected. However, equipment specifications and the locations for the BESS, inverters, and converters would be different under each option. Under either option, the solar project would use single-axis tracker technology to tilt the PV panels and follow the course of the sun, thereby optimizing the incident angle of sunlight on the surface of the panels. Intermittent noise from the operation of the electrical motors used to power the trackers would be negligible. The noise levels would be very low, occurring only periodically for brief durations throughout the day. Nonetheless, noise from tracker motors is included in the analysis.

To evaluate the noise levels that would be generated by the aforementioned noise sources, acoustical data (i.e., source noise levels) were derived from various sources, including manufacturers' specification sheets, previous noise assessments prepared for similar projects, and equipment information provided by the project applicant.

Two techniques were used to calculate noise contributions from individual project elements, depending on how the associated equipment would be distributed within the project site. The first technique was for project elements consisting of equipment located within a defined area of the project site. These elements would include the solar project substation, the centralized BESS under the AC Option, and the PG&E substation improvements (discussed separately below). The calculation of the noise

contributions from these elements was based on the total amount of equipment within each defined area and the closest distance between each receiver and each area (based on the project layout shown in Figure 2-2).

The second technique was for project elements that would have equipment distributed throughout the entire solar project site. These elements would include the BESS and DC-DC converters under the DC Option, the PV inverters, and the tracker motors. The noise contributions from these elements were calculated based on the distance from each receiver to the closest solar array and the approximate number of noise sources that would dominate nearby noise levels for each equipment type. Using the closest distances for these distributed project elements generates a worst-case assessment and provides flexibility for potential adjustments to the solar project design within the solar arrays.

Table 3.13-7 summarizes the solar project equipment considered in the operational noise analysis as well as the associated reference noise level at a reference distance of 50 feet. Calculations of the contributions from noise sources at each analyzed receiver were based on the closest distance between the sources and the combined noise levels for all equipment specified within each area. An analysis of the noise levels associated with the equipment proposed for each option is presented below.

Table 3.13-7. Solar Project Equipment Noise Levels

Equipment	Proposed for AC or DC Option?	dBA L_{eq} Noise Level at 50 feet
AC option BESS enclosure (Tesla Megapack with integrated inverter)	AC	63.3
DC option BESS enclosure, with four HVAC units per BESS enclosure (Model: Envicool MC90HDNC1A)	DC	61.3
Solar PV inverter (Model: Power Electronics PE FS4200MU CE)	AC and DC	61.8
Substation main step-up transformer, daytime (data provided by project applicant)	AC and DC	80.4
Substation main step-up transformer, nighttime (data provided by project applicant)	AC and DC	69.4
Substation control house HVAC, with two HVAC units (Model: Bard W30AB-A10XPXXXJ)	AC and DC	56.9
DC-DC converters (Model: FreeMaq DC/DC Bi-Directional Converter. Model: FD0525)	DC	58.9
Single-axis tracker motor	AC and DC	46.0

HVAC = heating, ventilating, and air-conditioning; PV = photovoltaic; AC = alternating current; DC = direct current. Refer to Appendix A of the Noise Technical Report for the Las Camas Solar Project for source noise levels and calculation output files.

A vegetated screen is proposed for development along the northern perimeter of the solar project site near the adjacent residential land uses. While this would help obstruct the view of the solar project from the neighboring homes, it is uncommon for vegetation to result in a noticeable reduction in noise unless the vegetated area is very dense and wide (Caltrans 2013). Therefore, the analysis assumes no noise attenuation as a result of the vegetated screen.

Detailed plans and specifications for the PG&E substation improvements have not yet been developed. Because the solar substation would include a dedicated substation with a large step-up transformer and an air-conditioned control house, it was assumed that operational noise from the PG&E substation improvements would be no greater than the operational noise from the solar project substation. To

provide a conservative analysis, the PG&E substation improvements were evaluated assuming they would produce the same noise level as the solar project substation. (i.e., the combined noise level from the main step-up transformer and the substation control house HVAC.)

It was assumed that operational noise from the PG&E substation improvements would be the same as the operational noise from the solar project substation (i.e., the combined noise level from the main step-up transformer and the substation control house HVAC.)

To analyze noise from on-site operations, modeling was conducted to estimate noise from individual pieces of equipment and combined equipment, as appropriate, based on the estimated locations for the equipment provided by the project applicant. Given the nature of the project, with both direct PV electrical generation and battery storage, which, presumably, could be accessed at any time, this analysis assumes that all equipment could be operational and generating noise up to 24 hours a day.

In addition to the aforementioned equipment, corona discharge noise emanating from the gen-tie lines may be audible at close range. This noise source is analyzed with use of data from prior noise studies for similar solar projects. Occasional noise would also be generated by periodic maintenance activities, such as panel washing. An analysis of these sources is also included in the operational noise assessment for the project.

The solar project could include a 25- to 50-kW diesel emergency generator. While generator noise during an emergency is exempt from county noise regulations, noise from generator testing is not. Accordingly, estimated noise levels from an example generator similar in size to the potential solar project generator are compared to allowable noise levels in the county to assess impacts from emergency generator testing.

The analysis of traffic noise in the project area was conducted with use of data from the project's traffic impact analysis (KD Anderson & Associates, Inc. 2022) and a proprietary traffic noise model; calculations were based on data from the FHWA Traffic Noise Model (FHWA 2004). This model allows for the calculation of noise levels at specific distances from the center of a roadway, based on traffic volumes, average speeds, and site environmental conditions. Using this model, roadway noise levels resulting from project operation were estimated and compared to the existing modeled traffic noise levels as well as measured ambient noise levels.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

Would the project result in:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- Generation of excessive ground-borne vibration or ground-borne noise levels?
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Short-Term Construction Noise Criteria

Merced County regulates construction noise levels per the requirements of Chapter 10.60, Noise Control, of the MCC. The noise ordinance contained in the MCC establishes acceptable hours for construction and limitations on construction-related noise impacts on adjacent sensitive uses outside the set daytime exempt hours. In addition to regulating allowable noise increases, the MCC provides quantitative criteria in terms of both L_{dn} and L_{max} . L_{dn} is a measure of the 24-hour noise level, while L_{max} is a measure of the short-term maximum noise level. Because construction would not occur 24 hours a day, the L_{max} criterion is most appropriate for assessing potential construction noise impacts. Noise from construction activity is exempt from the MCC's quantitative noise limitation during weekday hours between 7:00 a.m. and 6:00 p.m., provided all construction equipment is properly maintained. Construction noise is evaluated to estimate combined noise levels at the nearest noise-sensitive land uses during daytime hours, noting the temporary construction noise exemption described above for daytime weekday hours. Construction activities that take place outside of the daytime exempt hours of 6:00 p.m. to 8:00 p.m. (noting no construction is proposed for after 8:00 p.m.) are evaluated to determine if compliance with the overall noise standards contained in the MCC would occur, as increases beyond these standards could result in a substantial temporary increase in ambient noise levels. Construction noise is evaluated to determine if:

- Construction noise exceeds the average background sound level by at least 10 dBA at any noise-sensitive receptor (i.e., residence) during the non-exempt hours of 6:00 p.m. to 8:00 p.m.; or
- Construction noise exceeds 75 dBA L_{max} at any residential real property during the non-exempt weekday daytime hours of 6:00 p.m. to 8:00 p.m.

The MCC does not regulate construction traffic on public streets and freeways specifically. However, the *Merced County General Plan* Health and Safety Element provides traffic noise standards, which are assessed in terms of L_{dn} to account for the 24-hour nature of traffic. The general plan's criterion for residential uses is 65 dB L_{dn} ; however, the general plan does not quantify a permissible noise increase. Guidance regarding acceptable noise increases is provided by the MCC (refer to *Merced County Noise Ordinance* in the Regulatory Setting subsection presented previously), which indicates noise increases should be limited to less than 10 dBA during daytime hours (7:00 a.m. to 10:00 p.m.) and 5 dBA during nighttime hours (10:00 p.m. to 7:00 a.m.) Because construction traffic would occur during daytime hours, a 10 dB increase in traffic noise is used as a threshold for consistency with the MCC.

Because of the aforementioned factors, a significant impact would occur if:

- Construction noise exceeds the average background sound level by at least 10 dBA at any noise-sensitive receptor (i.e., residence) during the daytime hours of 7:00 a.m. to 10:00 p.m.; or
- Construction noise exceeds the average background sound level by at least 5 dBA at any noise-sensitive receptor (i.e., residence) during the nighttime hours of 10:00 p.m. to 7:00 a.m.; or
- Construction noise exceeds 75 dBA L_{max} on residential real property outside the weekday daytime hours of 7:00 a.m. to 6:00 p.m.; or

- Construction traffic generates noise in excess of 65 dB L_{dn} at any noise-sensitive receptor (i.e., residence); or
- Construction traffic exceeds existing traffic noise levels by at least 10 dB L_{dn} at any noise-sensitive receptor (i.e., residence).

The average daytime and nighttime ambient noise levels described in Chapter 4, *Existing Noise Environment*, were used to quantify potential construction noise exceedances over background sound levels. Construction noise was compared to the average noise level for the relevant corresponding time period. Construction traffic noise levels were compared to calculated existing traffic noise levels.

Long-Term Operational Noise Criteria

As discussed previously, stationary-source noise standards in Merced County are defined in MCC Chapter 10.60. Specifically, noise shall not exceed:

- 65 dBA L_{dn} on residential real property or 70 dBA L_{dn} on nonresidential real property; or
- 75 dBA L_{max} on residential real property or 80 dBA L_{max} on nonresidential real property; or

The background sound level by 10 dBA or more during daytime hours (7:00 a.m. to 10:00 p.m.) and 5 dBA or more during nighttime hours (10:00 p.m. to 7:00 a.m.).

To determine if stationary sources of noise associated with the project would result in significant impacts, modeled noise levels for project equipment were compared to the 65 dBA L_{dn} , 75 dBA L_{max} , and 10 dBA above-ambient standards from the County Code, as defined above. The lowest hourly ambient noise levels described in Chapter 4, *Existing Noise Environment*, were used to quantify potential operational noise exceedances over background levels. Operational noise was compared to the average noise level for the relevant corresponding time period.

Ground-borne Vibration Criteria

Although there are currently no comprehensive local regulatory standards for construction-related ground-borne vibration that are applicable to the proposed project, the previously cited Caltrans vibration criteria included in the *Transportation and Construction Vibration Guidance Manual* are routinely used to evaluate a variety of projects (not merely transit projects) proposed by local jurisdictions. That guidance is used in this analysis.

Impacts and Mitigation Measures

Impact NOI-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts related to noise that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.13-1 through 5.13-5 on pages 5.13-16 through 5.13-31 of the Community Plan EIR, which is incorporated by reference.

The Community Plan EIR found that construction noise could result in potentially significant impacts because the exact hours of construction were not specified in the project description at the time of the publication of the EIR. For this reason, and although construction noise that takes place during the daytime hours of 7:00 a.m. to 6:00 p.m. is considered exempt from the quantitative noise limits in the County Code, construction noise impacts were determined to be potentially significant. The Community Plan EIR determined that implementation of Mitigation Measure 5.13-1, which would limit construction noise to daytime hours, would be required. Construction noise impacts were determined to be less than significant with implementation of this mitigation measure. Regarding traffic noise, no evaluated roadway segments with existing noise-sensitive receptors were predicted to result in a 3 dB increase in noise as a result of the project. Traffic noise impacts were determined to be less than significant. Regarding stationary and area sources of noise, impacts were determined to be less than significant because no off-site noise-sensitive receptors would be near proposed area or stationary sources of noise affiliated with the project. The Community Plan EIR also found that future traffic and stationary source noise levels could exceed applicable land use compatibility standards at on-site noise-sensitive receptors (e.g., future residences). The Community Plan EIR included Mitigation Measures 5.13-4 and 5.13-5, which require future applicants to conduct site-specific acoustical analyses to ensure future noise environments meet County standards for the proposed land use. The Community Plan EIR found that even with implementation of Mitigation Measures 5.13-4 and 5.13-5, impacts would be significant and unavoidable. Therefore, the Community Plan EIR concluded that impacts to noise would be less than significant with mitigation for construction noise, and less than significant for traffic and stationary source noise, and significant and unavoidable with respect to land use compatibility with future noise levels. Impacts regarding vibration are discussed under Impact NOI-2 below.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change covering the solar project site to create a *Utility-Scale Solar Overlay*. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

As described in Chapter 2, *Project Description*, the project's proposed amendment would redistribute the housing that was planned under the community plan, thereby preserving the overall supply of residential units that could be developed during the life span of the solar project (i.e., 35 years); in other words, the proposed off-site General Plan amendment would maintain the County's overall capacity for developing new high-density/medium-density housing. However, it is important to note that the proposed project itself does not include the construction of new housing or any other type of physical development as part of the off-site

General Plan amendment. Therefore, the off-site residential-redesignation area would not result in direct impacts related to the generation of a substantial temporary or permanent increase in ambient noise. In addition, conditions have generally not changed in a way that would change the conclusions presented in the Community Plan EIR, as there are no major new or different sensitive receptors in the vicinity of the off-site residential redesignation area. Further, future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR, including Mitigation Measures 5.13-4 and 5.13-5 requiring site-specific acoustic studies for future development. Nonetheless, impacts would remain significant and unavoidable because of the potential for new noise-sensitive land uses to be adversely impacted by new and existing stationary and mobile noise sources. However, the significant impact would not be more severe since off-site residential redesignation would maintain the same types of land uses and noise sources evaluated in the Community Plan EIR, and would not introduce new land use types or noise sources. For these reasons, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

Construction of the project is anticipated to begin in mid-2024 and take approximately 14 months. Portions of the project site would be graded to provide a level foundation for roads and project components. In addition, vegetation would be cleared from the area beneath the arrays, as necessary. Access roads would be constructed around and between the arrays. These may include crushed aggregate to prevent damage to the soil. The arrays would sit on piles that would raise them above the surface to avoid the need for additional landscaping work. Solar project construction would disturb a total of approximately 1,287 acres.

Following site grading and preparation, steel piles would be driven into the ground, and the solar PV tables, trackers, and panels would be installed on top of them. Trenches would be dug on-site to bury the underground collection cables that would conduct the energy output from the panels to the solar inverters, storage inverters or converters, the BESS, and ultimately the solar project substation. Remaining construction activities would include installing the solar inverters and storage inverters or converters on-site, installing the BESS, constructing the solar project substation, constructing the high-voltage gen-tie line between the solar project's substation and the project's point of interconnection, and constructing the PG&E substation improvements (discussed below). After construction, the project is expected to operate for 35 years.

During the construction period for the project, temporary increases in noise levels in the vicinity would occur from the operation of various pieces of construction equipment. Given the size of the solar project site (approximately 1,741 acres), construction activities would not occur across the entire site at once but instead would occur on small portions of the site on any given day. Construction activities would occur for a relatively short period of time at a given location (e.g., a few days or weeks), then move to a new location. Therefore, noise levels experienced over the project construction period would fluctuate at individual receptors, depending on the type of construction activity and the proximity of that activity to the receptor in question. The noise levels generated by individual pieces of construction equipment planned for use with project construction activities are shown in Table 3.13-8.

Table 3.13-8. Construction Activities and Equipment Noise Levels

Equipment	Individual Equipment Noise Levels (dBA) at 50 Feet	
	Leq ¹	L _{max}
Air compressor	73.7	77.7
Boom truck	70.3	74.3
Backhoe	73.6	77.6
Drill seeder	72.1	79.1
Excavator	76.7	80.7
Generator	77.6	80.6
Grader	81.0	85.0
Light plants	69.8	72.8
Loader	75.1	79.1
Mower	80.0	84.0
Pickup truck	71.0	75.0
Roller	73.0	80.0
Rough terrain forklift	75.1	79.1
Scraper	79.6	83.6
Skid-steer loader	75.1	79.1
Crane	72.6	80.6
Post driver ²	81.0	88.0
Tractor	80.0	84.0
Trencher	77.4	80.4
Vendor trucks	70.3	74.3
Water truck	72.5	76.5

Source: Federal Highway Administration. 2006. *FHWA Roadway Construction Noise Model User's Guide*. FHWA-HEP-05-054. January. Available: https://www.fhwa.dot.gov/ENVIRONMENT/noise/construction_noise/rcnm/rcnm.pdf. Accessed: May 18, 2021. Except as noted.

¹. Based on standard estimated utilization rates from FHWA.

². Ambient Air Quality & Noise Consulting 2015.

In order to estimate combined construction noise levels for individual construction phases or activities, the composite hourly average noise levels for the multiple pieces of equipment proposed for concurrent use were first calculated at a reference distance of 50 feet. The details of these calculations, including a detailed list of equipment proposed for each project construction phase, are provided in Appendix A of the Noise Technical Report for the Las Camas Solar Project (Appendix 3.13-1 of this EIR). The estimated composite hourly average noise levels for each construction phase at 50 feet are summarized in Table 3.13-9; as shown in the table, the average hourly noise levels for the proposed project's construction activities would range from approximately 76 to 92 dBA L_{eq} at a reference distance of 50 feet.

Table 3.13-9. Composite Noise Levels for Each Construction Phase at 50 Feet

Construction Phase	Average Composite Hourly Noise Level (L_{eq}) at 50 feet, dBA
Site Preparation	88.3
Underground Work	89.9
PV System Installation	92.4
Battery Storage System Installation	81.1
Substation and Gen-Tie Line Installation	85.3
Testing and Commissioning	75.8
Solar Project Site Restoration	86.1
PG&E Substation Improvements, Site Preparation ¹	88.3
PG&E Substation Improvements, Underground Work ¹	89.9
PG&E Substation Improvements, Substation and Gen-Tie Line Installation ¹	85.3
PG&E Substation Improvements, Testing and Commissioning ¹	75.8
PG&E Substation Site Restoration ¹	86.1

PV = photovoltaic

¹ Although the discussion related to PG&E substation improvement construction is included below in the *PG&E Substation Improvement* subsection, modeling results for all construction activities are included in this table.

Source: Construction assumptions were provided by EDPR. See Appendix A of the Noise Technical Report for the Las Camas Solar Project for modeling data.

Modeling conducted using data from the Federal Highway Administration. 2006. *FHWA Roadway Construction Noise Model User's Guide*. FHWA-HEP-05-054. January. Available: https://www.fhwa.dot.gov/ENVIRONMENT/noise/construction_noise/rcnm/rcnm.pdf. Accessed: May 18, 2021.

Weekday Daytime Construction Noise

To identify worst-case noise levels for typical construction (primarily occurring during regular daytime hours on weekdays), potential construction-related noise impacts were assessed at the nearest off-site receivers, which included residences to the northwest, north, southeast, and south. Although not all sensitive receptors in the project vicinity were analyzed for their individual construction noise exposure, the noise levels at the receptors not specifically analyzed would be no worse than those predicted at the analyzed receiver locations because they are further away from project construction activities. Noise from the solar project site construction is assessed at receivers R2 through R6 for all phases of construction. Note that noise levels from the construction of the PG&E substation improvements (discussed below) are assessed only at receiver R1, which is the closest receiver to those improvements.

The closest construction activities to the residential neighborhood northwest of the project site would be limited to relatively brief and low-intensity activities, such as equipment mobilization and installation of the vegetative screening. At this time, it is expected that the construction perimeter fence would be installed approximately 25 feet north of the solar panels, which would be approximately 375 feet from the nearest residential property line. In addition, most Site Preparation activities (e.g., grading activities) would occur only within the footprint of the proposed solar arrays, or no closer than 400 feet from residential property lines. However, to ensure a conservative analysis, it is assumed that limited Site Preparation activities could occur anywhere on the site, or as close as 90 feet from the nearest residential property lines and 130 feet from the nearest residences.

After Site Preparation is complete, construction activities would generally occur no closer than 400 feet from residential property lines or 510 feet from the nearest residences. Detailed calculations for each of the project’s proposed construction phases are provided in Appendix A of the Noise Technical Report for the Las Camas Solar Project (Appendix 3.13-1), and the estimated construction noise levels at the nearest sensitive receivers during each construction phase are summarized in Table 3.13-10.

Table 3.13-10. Weekday Daytime Noise Levels and Increases at Nearest Receivers for Each Construction Phase

Receiver	Construction Phase	Average Construction Noise Level (Leq), dBA	Average Daytime Ambient Noise Level (Leq), dBA	Increase Over Daytime Ambient (Leq), dBA
R1	PG&E Substation Improvements (Site Preparation) ¹	58.3		2.2
	PG&E Substation Improvements (Underground Work) ¹	59.9		3.8
	PG&E Substation Improvements (Substation and Gen-Tie Line Installation) ¹	55.3	56.1	0.0
	PG&E Substation Improvements (Testing and Commissioning) ¹	45.8		0.0
	PG&E Substation Improvements (Project Site Restoration) ¹	56.2		0.1
R2	Site Preparation ¹	70.1		14.0
	Underground Work ¹	60.1		4.0
	PV System Installation ¹	61.1		5.0
	Battery Storage System Installation	49.9	56.1	0.0
	Substation and Gen-Tie Line Installation	49.1		0.0
	Testing and Commissioning	44.5		0.0
	Project Site Restoration	67.9		11.8
R3	Site Preparation	68.7		15.7
	Underground Work	61.6		8.6
	PV System Installation	64.1		11.1
	Battery Storage System Installation	52.8	53.0	0.0
	Substation and Gen-Tie Line Installation	42.7		0.0
	Testing and Commissioning	47.5		0.0
	Project Site Restoration	66.5		13.5
R4	Site Preparation	52.6		0.5
	Underground Work	52.9		0.8
	PV System Installation	55.3		3.2
	Battery Storage System Installation	44.1	52.1	0.0
	Substation and Gen-Tie Line Installation	39.9		0.0
	Testing and Commissioning	38.8		0.0
	Project Site Restoration	50.4		0.0

Receiver	Construction Phase	Average Construction Noise Level (Leq), dBA	Average Daytime Ambient Noise Level (Leq), dBA	Increase Over Daytime Ambient (Leq), dBA
R5	Site Preparation	53.9		0.7
	Underground Work	54.0		0.8
	PV System Installation	56.5		3.3
	Battery Storage System Installation	45.2	53.2	0.0
	Substation and Gen-Tie Line Installation	22.9		0.0
	Testing and Commissioning	39.9		0.0
	Project Site Restoration	51.7		0.0
R6	Site Preparation	52.7		0.0
	Underground Work	52.6		0.0
	PV System Installation	55.1		0.0
	Battery Storage System Installation	43.8	64.0	0.0
	Substation and Gen-Tie Line Installation	28.7		0.0
	Testing and Commissioning	38.5		0.0
	Project Site Restoration	50.5		0.0

Source: Appendix A of the Noise Technical Report for the Las Camas Solar Project (Appendix 3.13-1 of this EIR)

¹ Although the discussion related to PG&E substation improvement construction is included below in the *PG&E Substation Improvement* subsection, modeling results for all construction activities are included in this table.

As shown in Table 3.13-10, estimated worst-case noise levels at nearby receivers due to construction at the solar project site could range from 23 to 70 dBA L_{eq} and exceed existing average daytime noise levels by 0 to 16 dBA. These estimated worst-case noise levels would occur for only a relatively short period (i.e., when a given activity takes place in the areas nearest the affected receiver). For a large portion of the 14-month- project construction schedule, construction activities would occur much farther from the residences, and noise levels from construction would be lower. However, construction noise during weekday daytime hours is exempt from the quantitative noise limits of the MCC. Therefore, although temporary construction noise increases would occur during daytime hours, construction noise would still comply with the MCC as a result of the daytime construction noise exemption. Daytime construction noise impacts would therefore be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Evening Construction Noise

Although construction activities for the proposed project would occur mostly during the weekday daytime hours of 7:00 a.m. to 6:00 p.m., during which time construction noise is considered exempt from the quantitative noise thresholds contained in the MCC, some evening construction may occur. Although evening work is not specifically proposed, if work falls behind schedule, construction activities that generate low noise levels may extend past the typical daily end time of 6:00 p.m. but no later than 8:00 p.m. on a worst-case day when evening work is required. The solar project would not be required to comply with Community Plan Mitigation

Measure 5.13-1, which limits construction hours to between 7:00 a.m. and 6:00 p.m., because Mitigation Measure 5.13-1 applies to the phases of Community Plan buildout that would be implemented through Implementation Plans. The solar project would be implemented under the proposed overlay and would not be part of the phased development of the Community Plan or require an Implementation Plan.

Construction-related activities that may occur during evening hours include delivery offloads, panel laying, and cable laying and termination. Up to 20 individual nights/evenings (from 6:00 p.m. to 8:00 p.m.) are estimated for each activity as a reasonable worst-case scenario, resulting in a total of up to 60 individual evenings of construction activity. Note that evening activities would not take place in proximity to the nearest off-site residences. However, to ensure a conservative assessment, this analysis assumes that evening work could occur anywhere on the solar project site.

If evening construction were to occur in the northwest portion of the solar project site, equipment could be operating as close as 400 feet from the nearest residential property line or 510 feet from the nearest residence. To estimate reasonable worst-case noise levels from short-term localized evening construction, this analysis assumes that the three loudest pieces of equipment proposed for each evening phase would be operating concurrently and close to one another in the construction area closest to each of the analyzed receivers.

The construction equipment list provided by the project applicant was used in the modeling conducted to estimate reasonable worst-case noise levels from delivery offloads, panel laying, and cable laying and termination. Refer to Table 3.13-11 for the noise modeling results.

As shown in Table 3.13-11, noise levels from evening construction activities would not exceed the 75 dBA L_{max} threshold at nearby residential properties. In addition, evening construction would not exceed existing average evening noise levels by 10 dBA or more. Therefore, noise impacts from solar project construction activities occurring during evening hours would be considered less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction Traffic Noise

The data used in the analysis of construction traffic noise comes from the project traffic impact analysis (KD Anderson & Associates, Inc. 2022). Construction traffic would include trips made by workers' vehicles and heavy trucks (e.g., haul trucks, water trucks, vendor trucks) associated with work at both the solar project site and the PG&E substation site. Construction traffic noise impacts for the PG&E substation site are discussed separately in the *PG&E Substation Improvements* subsection, but construction traffic trips for both the solar project site and the PG&E substation site are included in the analysis results presented below.

Two different routes would be used to access the solar project site, depending on the type of vehicle. All construction workers commuting to the solar project site would use Billy Wright Road. All heavy trucks (e.g., haul trucks, water trucks, vendor trucks) would travel to the site via San Luis Drive, except for oversized trucks, which would need to use Billy Wright Road. Workers and trucks accessing the PG&E substation would use Jasper Sears Road.

Table 3.13-11. Noise Levels and Increases for Evening Construction Activities

Receiver	Construction Phase	Construction Noise Levels (L_{eq}), dBA		Average Evening Ambient Noise Level (L_{eq}), dBA	Increase Over Evening Ambient (L_{eq}), dBA
		L_{max}	L_{eq}		
R2	Delivery Offloads	54.0	50.1	50.5	0.0
	Panel Laying	55.7	50.5		0.0
	Cable Laying and Termination	54.2	50.2		0.0
R3	Delivery Offloads	57.8	53.8	49.3	4.5
	Panel Laying	59.4	54.2		4.9
	Cable Laying and Termination	57.9	53.9		4.6
R4	Delivery Offloads	47.2	43.3	52.2	0.0
	Panel Laying	48.9	43.7		0.0
	Cable Laying and Termination	47.3	43.4		0.0
R5	Delivery Offloads	48.5	44.6	45.2	0.0
	Panel Laying	50.2	45.0		0.0
	Cable Laying and Termination	48.7	44.7		0.0
R6	Delivery Offloads	46.9	42.9	54.3	0.0
	Panel Laying	48.6	43.3		0.0
	Cable Laying and Termination	47.0	43.0		0.0

Source: Appendix A of the Noise Technical Report for the Las Camas Solar Project

On a peak day during construction, the project could have up to 408 persons working on-site, generating 734 vehicle trips (367 round trips) in automobiles and light-duty trucks (i.e., personal pickup trucks). 720 of these trips would access the solar site via Billy Wright Road and the remaining 14 would access the PG&E substation via Jasper Sears Road. A peak day could also include 638 heavy truck trips (319 round trips), with 274 water truck trips and 364 truck trips for other construction (haul trucks, vendor trucks, etc.). 628 of these heavy truck trips would access the solar site via San Luis Drive and the remaining 10 would access the PG&E substation via Jasper Sears Road. Trips involving oversized trucks would be rare, estimated at 65 round trips over 14 months of construction, for an average of less than five per month. For the purposes of this analysis, it was assumed that two oversized trucks would use Billy Wright Road to access the site during the peak day.

To estimate traffic noise increases from workers' vehicles and heavy trucks during the project construction period, "existing" and "existing plus construction traffic" scenarios were modeled, using a spreadsheet based on the FHWA Traffic Noise Model. For traffic on highways (SR-33, SR-152, I-5), it was conservatively assumed that all the construction traffic (734 automobiles and light-duty trucks and 638 heavy trucks) could use each highway segment in a single day. For Billy Wright Road, San Luis Drive, and Jasper Sears Road the specific construction traffic distribution discussed above was applied (i.e., solar project workers' vehicles and oversized trucks on Billy Wright Road, all solar project heavy trucks on San Luis Drive, and all PG&E substation-related traffic on Jasper Sears Road). Refer to Table 3.13-12 for the results of construction traffic noise modeling.

Table 3.13-12. Modeled Construction Traffic Noise Levels in the Project Vicinity

Roadway	Segment	Distance from Roadway Centerline	Traffic Noise, dBA L _{dn}			
			Existing	Construction	Existing plus Construction	Increase Due to Construction
SR-152	From SR-33 to I-5	150	75.8	60.9	76.0	0.2
SR-152	From I-5 to Volta Rd	150	74.9	60.9	75.1	0.2
I-5	South of SR-152	150	78.6	60.9	78.7	0.1
SR-33	North of SR-152	150	73.3	60.9	73.5	0.2
SR-33	South of SR-152	150	73.7	60.9	73.9	0.2
Billy Wright Rd	South of SR-152	900	45.3	36.0	45.8	0.5
San Luis Dr	South of SR-152	50	49.0	60.0	60.3	11.3
Jasper Sears Rd ¹	South of Gonzaga	50	46.3	45.9	49.1	2.8

Source: Appendix A of the Noise Technical Report for the Las Camas Solar Project

Notes: Distances are the approximate distances from the roadway centerline to the nearest home and vary by location and roadway width.

¹ All traffic on Jasper Sears Road would be for the PG&E substation construction components.

As shown in Table 3.13-12, construction-related traffic would not generate noise in excess of 65 dB L_{dn} at any noise-sensitive receptor. Construction-related traffic would result in traffic noise increases well below the 10 dB threshold (2.8 dB or less) along all the roadways in the project area, except for San Luis Drive where the traffic noise increase due to project construction is estimated to be 11.3 dB. However, the overall measured ambient noise level in the vicinity of San Luis Drive was 57.6 dB L_{dn}, based on measurement LT2; therefore, the overall noise increase would actually be 2.7 dB.⁴ As a result, noise impacts related to construction traffic for both the solar project site and the PG&E substation improvements site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Total Construction Noise for the Solar Project

Construction activities at the solar project site would take place primarily during daytime weekday hours (7:00 a.m. to 6:00 p.m.), during which time construction noise is exempt from quantitative noise standards. During non-exempt hours, construction noise would comply with the County's 75 dBA L_{max} and 10 dB increase thresholds. Therefore, construction noise would comply with the

⁴ Although LT1 is closer to San Luis Drive than LT2, it was not selected for defining ambient noise levels because it was on a light pole immediately adjacent to the roadway. Therefore, measured noise levels at LT1 were most likely higher than actual ambient noise levels at outdoor areas of frequent human use (e.g., yards). LT2 is a more appropriate measurement for representing actual residential backyards or outdoor areas of frequent human use.

applicable local noise standards. Demolition noise due to decommissioning activities at the solar project site would also be limited to the exempt daytime hours in the County, and would therefore comply with applicable local guidelines. In addition, noise impacts from construction-related traffic accessing the solar project site were also determined to be less than significant. In conclusion, noise due to construction and decommissioning activities would comply with the applicable local standards contained in the MCC, and impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

Stationary Noise Sources

As discussed previously, two battery system options are being considered for the solar project, a DC coupled system (DC Option) and an AC coupled system (AC Option). These are evaluated at an equal level of detail in this assessment and the noise analysis for each option is presented below. Under the DC Option, 43 BESS equipment areas would be distributed among the solar arrays and co-located with the solar PV inverters throughout the solar project site. Under the AC Option, all lithium-ion batteries would be aggregated within a single centralized storage area near the western central portion of the solar project site (see Figure 2-2 in Chapter 2, *Project Description*).

As described in the *Methods for Analysis* section, this analysis uses a combination of sound specification data provided by the project applicant and example equipment similar to that expected for use with the project. Table 3.13-7, *Solar Project Equipment Noise Levels*, summarizes estimated noise levels from proposed operational equipment at a reference distance of 50 feet. The noise contribution at each analyzed receiver was first calculated for various individual project elements, then overall operational noise levels were calculated by combining the contributions from all project elements. The on-site electrical equipment noise for the DC option and the AC option are evaluated separately below.

On-site Electrical Equipment for the DC Option

Under the DC option, there would be 43 “DC BESS equipment areas,” which would be co-located with up to 43 solar PV inverters. One DC BESS equipment area would consist of one DC-DC converter and one DC BESS enclosure. DC BESS equipment areas would generally be co-located on a one-to-one basis with the solar PV inverters but may be co-located at up to a three-to-one ratio at some locations. This three-to-one scenario is considered a worst-case scenario for potential noise impacts because it could group more equipment near a single noise-sensitive receiver. Each BESS enclosure would have a door-mounted cooling system with approximately four small heating, ventilation, and air-conditioning (HVAC) units. This cooling system would be the dominant source of noise from the BESS.

A previous study for a solar installation indicated there would be 1,133 single-axis tracking system motors on a 485-acre site (VHB 2020). Assuming an equivalent number of motors per acre for the proposed solar project, approximately 4,067 single-axis tracking system motors would be distributed across the solar project site. These motors would all be within the solar array footprint.

Approximately 55 solar PV inverters would be distributed among the solar arrays throughout the 1,741-acre solar project site. Although the anticipated solar array footprint has been established, as shown in Figure 2-2, the exact locations for the inverters have not yet been determined.

In addition to these distributed noise sources, other equipment in the solar project and the PG&E substation improvements would generate noise. The other primary noise sources associated with the solar project would be the main step-up transformer and two HVAC units, which would provide cooling for the substation control house. Because detailed plans and specifications for the PG&E substation improvements have not yet been developed, noise levels from the PG&E substation improvements were estimated based on the solar project substation.

As described above, noise from the solar project site was modeled at the locations defined in the Project Description. To provide an estimate of remaining noise contributions from equipment, the following equipment was assumed to operate at the closest solar array boundary: six DC BESS enclosures (i.e., 24 BESS HVAC units), two DC-DC converters, two PV inverters, and 140 tracker motors. Complete calculation details and results are provided in Appendix A of the Noise Technical Report for the Las Camas Solar Project (Appendix 3.13-1 of this EIR). The results are summarized in Table 3.13-13.

Table 3.13-13. Calculated Operational Noise Levels for DC Option Equipment

Receiver	Noise Source	Equipment Noise Levels		Combined Equipment Noise Levels, dBA		
		Leq/Lmax ¹	Ldn	Daytime Leq/Lmax ¹	Nighttime Leq/Lmax ¹	Ldn
R1	BESS, DC-DC converters, and PV inverter	43.3	49.7			
	Solar project substation, daytime	45.9				
	Solar project substation, nighttime	35.1	45.6	57.8	48.4	58.1
	Tracker motors	38.8	36.8			
	PG&E substation, daytime ²	57.3				
	PG&E substation, nighttime ²	46.5	57.0			
R2	BESS, DC-DC converters, and PV inverter	43.3	49.7			
	Solar project substation, daytime	45.9				
	Solar project substation, nighttime	35.1	45.6	50.2	44.5	52.3
	Tracker motors	38.8	36.8			
	PG&E substation, daytime ²	45.6				
	PG&E substation, nighttime ²	34.9	45.4			
R3	BESS, DC-DC converters, and PV inverter	49.4	55.8			
	Solar project substation, daytime	38.9				
	Solar project substation, nighttime	28.1	38.6	51.2	49.5	56.2
	Tracker motors	44.9	42.8			
	PG&E substation, daytime ²	36.7				
	PG&E substation, nighttime ²	25.9	36.4			
R4	BESS, DC-DC converters, and PV inverter	36.6	43.0			
	Solar project substation, daytime	35.6				
	Solar project substation, nighttime	24.8	35.3	41.5	37.2	44.6
	Tracker motors	32.1	30.0			
	PG&E substation, daytime ²	36.3				
	PG&E substation, nighttime ²	25.6	36.1			

Receiver	Noise Source	Equipment Noise Levels		Combined Equipment Noise Levels, dBA		
		Leq/Lmax ¹	L _{dn}	Daytime Leq/Lmax ¹	Nighttime Leq/Lmax ¹	L _{dn}
R5	BESS, DC-DC converters, and PV inverter	38.4	44.8			
	Solar project substation, daytime	24.3				
	Solar project substation, nighttime	13.5	24.0	39.9	38.5	45.1
	Tracker motors	33.9	31.9			
	PG&E substation, daytime ²	22.7				
	PG&E substation, nighttime ²	11.9	22.4			
R6	BESS, DC-DC converters, and PV inverter	38.4	44.8			
	Solar project substation, daytime	18.2				
	Solar project substation, nighttime	7.4	17.9			
	Tracker motors	33.9	31.9	39.8	38.4	45.1
	PG&E substation, daytime ²	17.5				
	PG&E substation, nighttime ²	6.7	17.2			

¹. Assumes 100 percent utilization and constant noise levels; therefore Leq = Lmax.

². Although the discussion related to PG&E substation operational noise is included below in the *PG&E Substation Improvement* section, modeling results for all operational noise under the DC scenario are included in this table. Refer to Appendix A of the Noise Technical Report for the Las Camas Solar Project for source noise levels and calculation output files.

BESS = battery energy storage system; PV = photovoltaic; DC = direct current

The three noise thresholds that apply to this equipment are noise is limited to 65 dBA L_{dn} at the nearest residential property, noise is limited to 75 dBA L_{max} at the nearest residential property, and the background sound level shall not be exceeded by 10 dBA during daytime hours and/or 5 dBA during nighttime hours. The results in Table 3.13-13 illustrate that the DC option would comply with the first two criteria because all calculated L_{max} values are below 75 dBA and all calculated L_{dn} values are below 65 dBA. To quantify the noise increases due to operation of the DC option, calculated noise levels are compared to measured ambient noise levels, as shown in Table 3.13-14. The results illustrate that the DC option would also comply with the third criterion because calculated daytime or nighttime noise levels would not exceed the corresponding measured ambient noise level by 10 dBA or 5 dBA, respectively. As a result, noise impacts from operation of the DC option would be less than significant, consistent with the Community Plan EIR conclusion. Therefore, ***no new or substantially more severe impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Table 3.13-14. Noise Level Exceedances over Ambient due to DC Option Equipment

Receiver	Combined Equipment Noise Levels, Leq dBA		Lowest Hourly Ambient, Leq dBA		Hourly Exceedance, Leq dBA	
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime
R1	57.8	48.4	49.5	48.5	8.3	0.0
R2	50.2	44.5	49.5	48.5	0.7	0.0
R3	51.2	49.5	47.1	57.1	4.1	0.0
R4	41.5	37.2	58.3	53.8	0.0	0.0
R5	39.9	38.5	51.9	47.7	0.0	0.0
R6	39.8	38.4	57.4	52.6	0.0	0.0

Refer to Appendix A of the noise technical report for the project for source noise levels and calculation output files.

On-site Electrical Equipment for the AC Option

Under the AC Option, approximately 55 solar PV inverters would be distributed among the solar arrays throughout the 1,741-acre solar project site. Although the anticipated solar array footprint has been established, as shown in Figure 2-2, the exact locations for the inverters have not yet been determined. In addition, 112 BESS units would be aggregated within a single centralized storage area near the western central portion of the solar project site. These would be Tesla Megapack units, each with its own integrated inverter.

Using the same assumptions described under the DC Option, it is assumed that approximately 4,067 single-axis tracking system motors would be distributed across the solar project site under the AC Option. These motors would all be within the proposed solar array footprint. In addition to these distributed noise sources, other equipment in the solar project site would generate noise. The other primary noise sources associated with the solar project site would be the main step-up transformer and two HVAC units, which would provide cooling for the substation control house.

As described above, all noise from the solar project site and the PG&E substation improvements (discussed separately below) was modeled at the locations defined in the Project Description. To provide an estimate of remaining noise contributions from equipment, the following equipment was assumed to operate at the closest solar array boundary: two PV Inverters and 140 tracker motors.

Complete calculation details and results are provided in Appendix A of the Noise Technical Report for the Las Camas Solar Project (Appendix 3.13-1 of this EIR). The results are summarized in Table 3.13-15. The three noise thresholds that apply to this equipment are: noise is limited to 65 dBA L_{dn} at the nearest residential property, noise is limited to 75 dBA L_{max} at the nearest residential property, and the background sound level shall not be exceeded by 10 dBA during daytime hours and/or 5 dBA during nighttime hours. The results in Table 3.13-15 illustrate that the AC Option would comply with the first two criteria because all calculated L_{max} values are below 75 dBA and all calculated L_{dn} values are below 65 dBA. To quantify the noise increases due to operation of the AC Option, calculated noise levels are compared to measured ambient noise levels, as shown in Table 3.13-5. The results in Table 3.13-16 illustrate that the AC Option would also comply with the third criterion because calculated daytime or nighttime noise levels would not exceed the corresponding measured ambient noise level by 10 dBA or 5 dBA, respectively. As a result, noise impacts from operation of the AC Option would be less than significant, consistent with the Community Plan EIR conclusion. Therefore, ***no new or substantially more severe impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Gen-Tie Line

Overhead electrical lines, such as the proposed gen-tie line, would emit noise associated with corona discharge, an electrical discharge that ionizes the surrounding air. The noise associated with corona discharge is typically described as a crackling or humming sound. Based on data from a previous noise study for a solar project (Ambient Air Quality & Noise Consulting 2015), the noise level from corona discharge along a 230 kV transmission line is approximately 25 dBA at a distance of 25 feet. The gen-tie line would be more than 25 feet from the nearest residences at the closest point. The noise level would be well below all applicable Merced County noise standards (e.g., 65 dBA L_{dn}, 75 dBA L_{max}, increases over ambient noise levels). Because noise from the lines would generally not be audible above background levels at nearby homes, noise impacts from project gen-tie lines would be less than significant, consistent with the Community Plan EIR conclusion. Therefore, ***no new or substantially more severe impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Table 3.13-15. Calculated Operational Noise Levels for AC Option Equipment

Receiver	Noise Source	Equipment Noise Levels		Combined Equipment Noise Levels, dBA		
		L _{eq} /L _{max} ¹	L _{dn}	Daytime L _{eq} /L _{max} ¹	Nighttime L _{eq} /L _{max} ¹	L _{dn}
R1	Solar project substation, daytime	45.9				
	Solar project substation, nighttime	35.1	45.6			
	PV inverters	36.2	42.6	57.7	47.4	57.6
	BESS	34.0	40.4			
	Tracker motors	38.8	36.8			
	PG&E substation, daytime ²	57.3				
	PG&E substation, nighttime ²	46.5	57.0			
R2	Solar project substation, daytime	45.9				
	Solar project substation, nighttime	35.1	45.6			
	PV inverters	36.2	42.6	49.6	41.6	50.5
	BESS	35.9	42.4			
	Tracker motors	38.8	36.8			
	PG&E substation, daytime ²	45.6				
	PG&E substation, nighttime ²	34.9	45.4			
R3	Solar project substation, daytime	38.9				
	Solar project substation, nighttime	28.1	38.6			
	PV inverters	42.2	48.6	48.3	44.0	51.3
	BESS	38.6	45.0			
	Tracker motors	44.9	42.8			
	PG&E substation, daytime ²	36.7				
	PG&E substation, nighttime ²	25.9	36.4			
R4	Solar project substation, daytime	35.6				
	Solar project substation, nighttime	24.8	35.3			
	PV inverters	29.4	35.8	41.7	37.8	45.0
	BESS	36.5	42.9			
	Tracker motors	32.1	30.0			
	PG&E substation, daytime ²	36.3				
	PG&E substation, nighttime ²	25.6	36.1			
R5	Solar project substation, daytime	24.3				
	Solar project substation, nighttime	13.5	24.0			
	PV inverters	31.2	37.7	39.0	37.1	43.8
	BESS	35.7	42.1			
	Tracker motors	33.9	31.9			
	PG&E substation, daytime ²	22.7				
	PG&E substation, nighttime ²	11.9	22.4			

Receiver	Noise Source	Equipment Noise Levels		Combined Equipment Noise Levels, dBA		
		Leq/Lmax ¹	Ldn	Daytime Leq/Lmax ¹	Nighttime Leq/Lmax ¹	Ldn
R6	Solar project substation, daytime	18.2	17.9	36.3	32.4	39.6
	Solar project substation, nighttime	7.4				
	PV inverters	31.2	37.7			
	BESS	25.7	32.1			
	Tracker motors	33.9	31.9			
	PG&E substation, daytime	17.5	17.2			
	PG&E substation, nighttime	6.7				

1. Assumes 100 percent utilization and constant noise levels; therefore Leq = Lmax.

2. Although the discussion related to PG&E substation operational noise is included below in the *PG&E Substation Improvement* section, modeling results for all operational noise under the AC scenario are included in this table. Refer to Appendix A of the Noise Technical Report for the Las Camas Solar Project for source noise levels and calculation output files.

BESS = battery energy storage system; PV = photovoltaic; DC = direct current

Table 3.13-16. Noise Level Exceedances over Ambient due to AC Option Equipment

Receiver	Combined Equipment Noise Levels, Leq dBA		Lowest Hourly Ambient, Leq dBA		Hourly Exceedance, Leq dBA	
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime
R1	57.7	47.4	49.5	48.5	8.2	0.0
R2	49.6	41.6	49.5	48.5	0.1	0.0
R3	48.3	44.0	47.1	57.1	1.2	0.0
R4	41.7	37.8	58.3	53.8	0.0	0.0
R5	39.0	37.1	51.9	47.7	0.0	0.0
R6	36.3	32.4	57.4	52.6	0.0	0.0

Refer to Appendix A of the Noise Technical Report for the Las Camas Solar Project for source noise levels and calculation output files.

On-site Maintenance Activities

The primary maintenance activity that would generate noticeable noise levels at the solar project site would be the washing of solar panels, which is anticipated to occur once a year. Panel washing would occur Monday through Friday for up to 20 business days over the course of a 30-day period, taking place only during daylight hours (not during the nighttime hours of 10 p.m. to 7 a.m.). Based on manufacturer’s published data, pressure washers have been determined to generate noise levels of up to 82 dBA at 10 feet. Comparing this noise level to the applicable noise thresholds, pressure washer noise would be reduced to 75 dBA Lmax at a distance of approximately 20 feet, 65 dB Ldn at a distance of approximately 90 feet, and to within 10 dB of daytime ambient noise levels at distances of approximately 150 to 250 feet, depending on the receptor. Because there are no sensitive receptors (homes) within these impact distances from the proposed solar panel arrays, there would be no exceedances of the thresholds. Furthermore, washing activity at any one area within the project site would be relatively brief; once completed in one area, washing operations would move to another area of the roughly 1,741-acre site. As a result, noise impacts related to on-site operations

and maintenance at the solar project site would be less than significant, consistent with the Community Plan EIR conclusion. Therefore, ***no new or substantially more severe impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Emergency Generator

An emergency generator may be required for the proposed project. Emergency generator noise is evaluated in this assessment to address the potential for an emergency generator to be added to the solar project site plan at a later time. Note that generator noise is typically considered exempt from local ordinances during an emergency. However, during intermittent testing of the generator, generally monthly for a period of 30 to 60 minutes, noise levels must comply with the local allowable noise limits.

Should it be determined that a generator is required for the proposed project, the applicant has indicated that the size range of the generator would be between 25 and 50 kW. As an example, a 50 kW Cummins C50D6C generator can generate a noise level of 85 dBA at a distance of 50 feet without accounting for any attenuation features. A specific location for the potential generator has not been selected. Depending on the final location selected, it is possible that noise from the generator would be below the allowable noise levels in the county (e.g., 75 dBA L_{max} , 65 dBA L_{dn} , 10 dB or 5 dB above the ambient noise level during daytime and nighttime hours, respectively) at the nearby residential land uses, based on distance attenuation. However, because specific details regarding the size of the emergency generator, the location, and the testing schedule are currently unknown, it is conservatively assumed that the proposed emergency generator could result in noise levels in excess of allowable limits at nearby sensitive uses in the county during testing. This is especially true if generator testing were to occur during evening or nighttime hours when people are generally considered more sensitive to noise. Therefore, impacts from the potential emergency generator would be considered significant, and the following project-specific mitigation would be required.

Mitigation Measure NOI-1: Design the solar project emergency generator installation to comply with the requirements of the MCC during periodic testing.

Should an emergency generator be determined necessary for solar project implementation, a focused acoustical study shall be completed by the project applicant and submitted to the director of the Community & Economic Development Department prior to installation of the generator to ensure that the applicable Merced County noise standards are not exceeded at any nearby noise-sensitive receptors. Specifically, the study shall determine the necessary design features (including noise control features) to ensure generator compliance with the following requirements of the County noise ordinance (Section 10.60.030 of the MCC) during periodic testing:

- The generator shall not exceed the background sound level by ten (10) dBA or more during daytime hours (7:00 a.m. to 10:00 p.m.) or by five (5) dBA or more during nighttime hours (10:00 p.m. to 7:00 a.m.). The background sound level for purposes of this assessment shall be determined as set forth in MCC Section 10.60.060. Suitable measured background sound levels are provided in Table 3.13-5. The minimum measured daytime or nighttime L_{eq} shall be selected from the measurement location(s) that best represent the sensitive receptor(s) to be analyzed.

- Noise from the generator shall not exceed sixty-five (65) dBA L_{dn} on residential real property.
- Noise from the generator shall not exceed seventy-five (75) dBA L_{max} on residential real property.

Generator noise control measures may include, but are not limited to:

- Locating the emergency generator away from noise-sensitive receptors;
- Selecting a quieter generator model;
- Equipping the generator with an appropriate muffler (exhaust silencer) to reduce exhaust noise;
- Equipping the generator with an appropriate sound enclosure to reduce radiated noise; and
- Placing a noise barrier(s) around one or more sides of the generator.

The calculations shall be based on the most recent solar project plans and emergency generator specifications. These may include additional details regarding the solar project design, which could help to reduce noise levels (e.g., the effects of site-specific terrain and ground cover or the shielding of noise sources by intervening equipment or structures, including solar arrays). The Study shall be approved by the Director of the Community & Economic Development Department prior to installation of the generator.

Mitigation Measure NOI-1 would be effective because multiple proven noise-reduction techniques could be used independently or together to reduce generator noise. Generator sound enclosures combined with exhaust silencers routinely reduce generator noise by 10 dB or more; screen walls that block the line of sight between a noise source (e.g., a generator) and a receptor can reduce noise levels by 5 dB or more. As a result, multiple effective design approaches are available for controlling generator noise. Furthermore, given the size of the solar project site, it would be possible to eliminate noise impacts by simply placing the generator far enough away from the closest receptors.

Implementation of Mitigation Measure NOI-1 would reduce operational noise impacts from the emergency generator consistent with the noise thresholds in the county, thereby reducing this impact to a less than significant level, consistent with the Community Plan EIR conclusion. Therefore, ***with implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Operational Traffic

The traffic data from the project traffic impact analysis (KD Anderson & Associates, Inc. 2022) indicate that, on a peak day, up to eight employee vehicles and 21 water trucks would travel to and from the project site during operation. This would equate to a total of 16 trips by automobiles and light-duty trucks and 42 trips by heavy trucks. These vehicles would access the project site via Billy Wright Road. The traffic noise modeling, provided in Appendix A, indicates that daily project noise levels would be approximately 36 dBA L_{dn} at the closest residence to Billy Wright Road. This is substantially lower than the estimated existing traffic noise level of 45 dBA L_{dn} . As a result, the predicted noise would not cause a substantial increase in existing noise levels or cause a traffic noise level in excess of the County standard of 65 dBA L_{dn} for residential property. It is also noted that operational traffic on Billy Wright Road would be inaudible at the residential uses northwest of the solar project site because they are approximately two miles away. As a result, noise impacts due to operational traffic would be less than

significant, consistent with the Community Plan EIR conclusion. Therefore, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Total Operational Noise for the Solar Project

Stationary equipment noise sources at the solar project site under both the AC and the DC options would result in operational noise that would comply with all three applicable criteria in Merced County (besides the generator, which is discussed below). In addition, noise from project gen-tie lines, on-site operations and maintenance activities, and solar project traffic would also not exceed applicable thresholds.

Noise levels from the potential emergency generator are not currently known, so it is not possible to guarantee that noise levels would comply with applicable thresholds. To reduce noise from the emergency generator such that compliance with applicable threshold would be achieved, Mitigation Measure NOI-1 would be required. With the implementation of Mitigation Measure NOI-1, the emergency generator would not result in noise levels in excess of applicable thresholds in the County. As a result, with implementation of this recommended measure, all operational noise sources would be in compliance with applicable local noise standards; impacts would be less than significant, consistent with the Community Plan EIR conclusion. The solar project would not be required to implement Community Plan Mitigation Measures 5.13-4 and 5.13-5, which apply to tentative subdivision maps and non-residential projects requiring building permits. Therefore, ***with implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Decommissioning

Decommissioning and site reclamation would begin immediately after the 35-year lifespan of the solar project, expected in 2060, and would primarily occur during the daytime hours specified in the MCC (e.g., 7:00 a.m. to 6:00 p.m. weekdays). As with the solar project, although evening work is not specifically proposed, if work falls behind schedule, activities that generate low noise levels may extend past the typical daily end time of 6:00 p.m. but would occur no later than 8:00 p.m. on a worst-case day when evening work is required. Decommissioning activities that take place during the daytime weekday hours of 7:00 a.m. to 6:00 p.m. would be exempt from the quantitative noise standards contained in the MCC. Therefore, daytime noise impacts from decommissioning activities would be less than significant. Construction noise from activities that may take place outside of these daytime exempt hours is evaluated to determine if a 10 dB increase in noise or an exceedance of the 75 dBA L_{max} standard is anticipated to occur.

Regarding evening decommissioning noise, and as shown in Table 3.13-15 for the solar project, noise levels from evening construction and/or decommissioning activities would not exceed the 75 dBA L_{max} threshold at nearby residential properties. In addition, evening construction would not exceed existing average evening noise levels by 10 dBA or more. As a result, noise impacts from solar project decommissioning activities occurring during evening hours would be considered less than significant, consistent with the Community Plan EIR conclusion. Therefore, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The evaluation of noise impacts associated with the solar project, including the portion of the solar project located on the lands outside of the Community Plan, is included in the analysis above.

Off-Site Mitigation Site

The proposed project would be required to prepare a Habitat Conservation Plan (HCP) which would include the establishment of an off-site mitigation site in an area of 1,498 acres located south of the solar project site. No new land uses would be constructed on the off-site mitigation site; rather, the site would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. Once established, operational activities at the off-site mitigation site, including livestock grazing and targeted invasive plant management activities, would require very few personnel or vehicles. No construction or development activity would take place as a result of the establishment of the mitigation site, and no new operational sources of noise would be introduced. Therefore, there would be no impact related noise at the off-site mitigation site; impacts would be less than those identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Construction

Construction of the PG&E substation improvements would overlap with the solar project's Underground Work, PV System Installation, Battery Storage System Installation, Substation and Gen-Tie Line Installation, Testing and Commissioning, and Project Site Restoration phases, and would take approximately eight months to complete. Because a detailed construction schedule for the PG&E substation improvements has not yet been developed, reasonable assumptions were applied for purpose of this analysis. Many of the same general construction tasks would be necessary at the PG&E substation site as at the solar site, including Site Preparation, Underground Work, Substation Equipment Installation, and Testing and Commissioning, and Site Restoration at the end of construction. Other construction activities proposed at the solar project site, such as installation of PV and battery storage systems, would not occur at the PG&E substation improvements site. Because the PG&E substation site is much smaller than the solar project site, it is anticipated that construction noise from the PG&E substation improvements would be no greater than the noise levels for similar activities at the solar site. As a result, the following construction phases for the solar project were used as proxies to estimate the noise levels associated with the PG&E substation improvements: Site Preparation, Underground Work, Substation and Gen-Tie Line Installation, Testing and Commissioning, and Project Site Restoration. That is, the general activities within these same phases were assumed to occur at the PG&E substation. Noise levels from the construction of the PG&E substation improvements were assessed only at receiver R1, which is the closest receiver to those improvements, because noise levels at the other receivers would be lower as a result of their increased distance from the PG&E substation improvement area.

Weekday Daytime Construction Noise

As described previously, to identify worst-case noise levels for typical construction (primarily occurring during regular daytime hours on weekdays), potential construction-related noise impacts were assessed at the nearest off-site receivers. Table 3.13-9 (presented previously) shows the composite noise levels at a fixed distance of 50 feet for each construction phase of the PG&E substation improvements (Site Preparation, Underground Work, Substation and Gen-Tie Line Installation, Testing and Commissioning, and Site Restoration). Weekday daytime noise levels from specific construction activities at the nearest receivers are shown in Table 3.13-10 (presented previously), noting that Receiver R1 represents the closest home to the proposed PG&E substation improvements.

As shown in Table 3.13-10, estimated worst-case construction-related noise levels from the PG&E substation improvements at the nearest receiver (R1) could range from 46 to 60 dBA L_{eq} , and exceed existing average daytime noise levels by 0 to 4 dB. However, construction noise during weekday daytime hours is exempt from the limits of the MCC. Therefore, noise due to construction of the PG&E substation improvements completed during daytime exempt hours would comply with the MCC. As a result, noise impacts due to construction of the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Evening Construction Noise

There would be no impact due to evening construction at the PG&E substation improvements site because evening construction activities would not occur at that location. Impacts would be less than those identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction Traffic Noise

Construction traffic noise impacts for the PG&E substation site are evaluated based on data provided in the project traffic impact analysis (KD Anderson & Associates, Inc. 2022). As discussed in the construction traffic noise analysis for the solar project site, workers and trucks accessing the PG&E substation would use Jasper Sears Road.

On a peak day during construction, the PG&E substation site could have up to 14 vehicles accessing the PG&E substation site via Jasper Sears Road. A peak day could also include 10 heavy truck trips accessing the PG&E substation via Jasper Sears Road. To estimate traffic noise increases from workers' vehicles and heavy trucks during the project construction period, "existing" and "existing plus construction traffic" scenarios were modeled, using a spreadsheet based on the FHWA Traffic Noise Model. As shown in Table 3.13-12, presented previously, construction-related traffic would result in traffic noise increases well below the 10 dB threshold (2.8 dB or less) along Jasper Sears Road (the only road providing access to the PG&E substation site during construction). In addition, the resulting traffic noise level would be below the allowable 65 dBA L_{dn} noise compatibility guideline for outdoor residential areas in the county. As a result, noise impacts related to construction traffic for the PG&E substation improvements site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Total Construction Noise for the PG&E Site

Noise impacts due to construction activities at the PG&E substation site during daytime weekday hours were determined to be less than significant; no evening construction would take place at this site, so there would be no impact related to evening construction at the PG&E substation site. Noise impacts related to construction traffic accessing the PG&E substation site would be less than significant. Furthermore, PG&E construction traffic noise would not combine with on-site construction noise to result in greater overall noise impacts at the nearest homes because that traffic would utilize Jasper Sears Road, which is west of the PG&E substation site and more than 2,500 feet west of the nearest residential property). Therefore, overall construction noise impacts from the PG&E substation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

Stationary Noise Sources

On-site Electrical Equipment for the DC Option

Because specifics regarding noise sources at the PG&E substation site are not known at this time, the analysis of operational noise from on-site electrical equipment conservatively assumes that those improvements would generate noise levels identical to those from the solar project site substation. As described above, noise from the solar project site and the PG&E substation was modeled for the DC option and the calculated noise levels are reported in Table 3.13-13. The resulting noise level increases are reported in Table 3.13-14.

The three noise thresholds that apply to this equipment are: noise is limited to 65 dBA L_{dn} at the nearest residential property, noise is limited to 75 dBA L_{max} at the nearest residential property, and the background sound level shall not be exceeded by 10 dBA during daytime hours and/or 5 dBA during nighttime hours. The results in Table 3.13-13 and Table 3.13-14 illustrate that noise from the PG&E substation under the DC option would comply with all three applicable thresholds at all analyzed receivers, including R1 (the receiver closest to the PG&E substation). As a result, noise impacts from the operation of the PG&E substation under the DC option would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

On-site Electrical Equipment for the AC Option

Because specifics regarding noise sources at the PG&E substation site are not known at this time, the analysis of operational noise from on-site electrical equipment conservatively assumes that those improvements would generate noise levels identical to those from the solar project site substation.

As described above for the DC option, noise from the solar project site and the PG&E substation was modeled for the AC and the calculated noise levels are reported in Table 3. 13-15. The resulting noise level increases are reported in Table 3.13-16.

The three noise thresholds that apply to this equipment are: noise is limited to 65 dBA L_{dn} at the nearest residential property, noise is limited to 75 dBA L_{max} at the nearest residential property, and the background sound level shall not be exceeded by 10 dBA during daytime hours and/or 5 dBA during

nighttime hours. The results in Table 3.13-15 and Table 3.13-16 illustrate that noise from the PG&E substation under the AC option would comply with all three applicable thresholds at all analyzed receivers, including at R1 (the receiver closest to the PG&E substation). As a result, noise impacts from the operation of the PG&E substation under the AC option would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Emergency Generator

The PG&E substation improvements do not include an emergency generator. Therefore, there would be no impact from the PG&E substation improvements with respect to this type of noise source; impacts would be less than those identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operational Traffic

The PG&E substation improvements would not result in additional operational trips to the PG&E substation site beyond what already occurs. Therefore, there would be no impact from the PG&E substation improvements with respect to this type of noise source; impacts would be less than those identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Total Operational Noise for the PG&E Site

Total operational equipment noise sources from the PG&E substation site would result in less than significant noise impacts because stationary equipment noise sources from the PG&E substation site would comply with all three applicable criteria in Merced County. Therefore, noise impacts from project operations for the PG&E substation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Construction noise impacts from the solar project site during weekday daytime hours were analyzed and determined to be less than significant. Similarly, construction noise impacts during project decommissioning would also be less than significant during weekday daytime hours, consistent with the Community Plan EIR conclusion.

Construction noise impacts from the solar project site during evening hours were also analyzed, and impacts were determined to be less than significant. In addition, noise impacts related to construction traffic noise would also be less than significant. Construction noise impacts from the PG&E substation site would be less than significant during daytime weekday hours; no evening construction would take place at this site, so there would be no impact related to evening construction at the PG&E substation site. Construction noise impacts for all project components would be less than significant, consistent with the Community Plan EIR conclusion.

Regarding project operations, stationary noise sources from the solar project site and PG&E substation site under both the AC and the DC options would result in less than significant noise impacts because operational noise would comply with all three applicable criteria in Merced County. In addition, noise from the gen-tie lines would generally not be audible above background levels at nearby homes, so noise impacts from project gen-tie lines would be less than significant, consistent with the Community Plan EIR conclusion. Further, noise impacts related to on-site operations and maintenance were assessed, and noise impacts from these activities would be less than significant, consistent with the Community Plan EIR conclusion. In addition, operational traffic noise was also evaluated, and noise impacts were determined to be less than significant, consistent with the Community Plan EIR conclusion.

Regarding an on-site emergency generator, because it is unknown if an emergency generator would be required for the proposed project, the analysis assumed a generator would be required. Based on the analysis included in this EIR, impacts from the potential emergency generator would be considered significant because not enough details are currently known to guarantee that noise levels would comply with applicable thresholds. To reduce the potential operational noise impacts of the emergency generator, Mitigation Measure NOI-1 would be required. With implementation of Mitigation Measure NOI-1, the emergency generator would not result in noise levels in excess of thresholds in the county. Impacts from emergency generator testing at the solar project would be less than significant with mitigation, consistent with the Community Plan EIR conclusion.

Regarding the off-site mitigation site, no construction or development activity would take place as a result of the establishment of the mitigation site, and no new operational sources of noise would be introduced. Therefore, there would be no impact related noise at the off-site mitigation site; impacts would be less than those identified in the Community Plan EIR.

Regarding the off-site residential redesignation, impacts would remain significant and unavoidable because of the potential for new noise-sensitive land uses to be adversely affected by new and existing stationary and mobile noise sources, consistent with the Community Plan EIR conclusion.

Based on the analysis above, the whole project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, would result in a significant and unavoidable impact that would not be more severe than the significant and unavoidable impact identified in the Community Plan EIR. ***With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Impact NOI-2: Generation of excessive ground-borne vibration or ground-borne noise levels? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts related to vibration that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.13-6 on pages 5.13-31 through 5.13-32 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that project-generated construction vibration levels could exceed Caltrans' recommended standard of 0.2 in/sec peak particle velocity (PPV) with respect to the prevention of structural damage for normal buildings and the FTA maximum acceptable vibration standard of 80

vibration decibels (VdB) with respect to human response for residential uses (i.e., annoyance) at vibration-sensitive land uses. As a result, construction-related vibration impacts for both damage and annoyance were determined to be significant. The Community Plan EIR concluded that operation of the project would not result in vibration impacts, and that vibration-related impacts would be limited to construction. Therefore, Mitigation Measure 5.13-6, which prohibits the operation of heavy-duty construction equipment within 60 feet of an occupied structure or within 15 feet of uninhabited structures, would be required to be implemented. With implementation of this mitigation measure, impacts related to construction vibration were determined to be less than significant with mitigation.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a *Utility-Scale Solar Overlay*. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from single-family residential use to high-density/medium-density residential use.

As described in Chapter 2, *Project Description*, the project's proposed amendment would redistribute the housing that was planned under the community plan, thereby preserving the overall supply of affordable residential units that could be developed during the life span of the solar project (i.e., 35 years). However, it is important to note that the proposed project itself does not include the construction of new housing or any other type of physical development as part of the off-site General Plan amendment. Therefore, the off-site residential-redesignation area would not result in direct impacts related to the generation of excessive ground-borne vibration or ground-borne noise levels. In addition, conditions have generally not changed in a way that would change the conclusions in the Community Plan EIR, as there are no major new or different sensitive receptors in the vicinity of the off-site residential redesignation area. Further, future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. Therefore, the proposed off-site residential redesignation area would have a less-than-significant impact with mitigation from the generation of excessive ground-borne vibration or ground-borne noise, consistent with the Community Plan EIR conclusion. For these reasons, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

Damage to Structures

Construction of the proposed project would involve the use of construction equipment that could generate ground-borne vibration. Typical vibration levels associated with heavy-duty construction equipment at a reference distance of 25 feet, as well as other distances, are shown in Table 3.13-17. The most vibration-intensive types of construction equipment expected to be used on the solar project site are a post driver (to install the panel racks) and a vibratory roller.

Table 3.13-17. Vibration Source Levels for Project Construction Equipment

Equipment	Reference PPV at 25 Feet	PPV at 130 Feet	PPV at 500 Feet
Vibratory roller	0.210	0.034	0.008
Post driver ¹	0.161	0.026	0.006
Auger drill	0.089	0.015	0.003
Large bulldozer ²	0.089	0.015	0.003
Loaded trucks	0.076	0.012	0.003
Small bulldozer ³	0.003	0.000	0.000

Note: **Bold** text indicates values that are used in the analysis below.

Source: Caltrans 2020, except as noted.

¹ Calculation based on a reference PPV level of 0.65 in/sec for a 36,000-foot-pound pile driver and a maximum energy level of 2,200 foot-pounds for post drivers.

² Considered representative of other heavy earthmoving equipment such as excavators, graders, backhoes, etc.

³ Considered representative of smaller equipment such as small skid steers and mini excavators.

Construction activities such as equipment mobilization, and installation of the vegetative screening could occur as close as 130 feet from the nearest residential structure (i.e., the nearest occupied sensitive buildings). However, the more vibration-intensive construction activities, such as grading and pile driving for the solar PV arrays, would be approximately 500 feet from the nearest residential structure. The PG&E substation improvements would be at least 500 feet from the nearest residential structure.

Referring to Table 3.13-17, the most vibration-intensive piece of equipment proposed for project construction would be a vibratory roller, which is assumed to operate anywhere on the solar project site. Therefore, an analysis of a vibratory roller at a distance of 130 feet provides a reasonable worst-case assessment for construction-related vibration effects from the solar project site.

At a distance of 130 feet, the PPV vibration level from a vibratory roller would be approximately 0.026 in/sec. For the purposes of this analysis, structures in the neighborhood north of the solar project site are conservatively assumed to fall under the “older residential structures” category, a Caltrans vibration category for damage impacts, as shown in Table 3.13-1. The damage criterion for structures in this category is a PPV of 0.3 in/sec for continuous/frequent intermittent sources of vibration, such as construction activity. Therefore, the estimated vibration level from a vibratory roller at the nearest residential structures to the solar site would be well below the damage criterion (i.e., PPV of 0.3 in/sec) for “older residential structures.”

Although a small pile driver (post driver) would also be used at the solar project site, it would generate less vibration than a vibratory roller and would be used farther from the homes. Specifically, a post driver would be used to install the supports for the solar arrays; therefore, it

would operate at least 500 feet from the nearest residential structure. At a distance of 500 feet, the post driver would result in a PPV vibration level of 0.006 in/sec. This vibration level is also well below the PPV damage criterion for “older residential structures” of 0.3 in/sec.

Based on the estimated vibration levels presented above, the equipment proposed for project construction at the solar project site would result in vibration levels that would be below the applicable criterion. Note that project construction equipment would typically be operating even farther from off-site structures than the aforementioned distances, resulting in even lower vibration levels. Therefore, vibration levels from the most vibration-intensive project construction activities, as well as the nearest project construction activities to off-site uses, would not be expected to exceed the applicable damage criterion for structures near the solar project site. The solar project does not propose construction within 60 feet of an inhabited residence or within 15 feet of an uninhabited structure; therefore, Community Plan Mitigation Measure 5.13-6 would not apply to the solar project. Damage-related vibration impacts would be less than significant for the solar project site, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Vibration-Related Annoyance

Vibration-related annoyance is typically considered to be substantial if it is expected to result in sleep disturbance at nearby residences. The Caltrans vibration-related “strongly perceptible” annoyance criterion (i.e., PPV of 0.1 in/sec) is often used to assess the potential for sleep disturbance during nighttime hours. Construction activities for the proposed project would occur mostly during the daytime hours of 7:00 a.m. to 6:00 p.m. However, some evening construction may occur at the solar project site, with construction ending by 8:00 p.m. on a worst-case day when evening work is required. Although no construction would occur at night when people are most likely to be sleeping, estimated vibration levels from proposed construction equipment are evaluated to determine if a strongly perceptible vibration level would be generated during daytime or evening hours (i.e., not only during nighttime hours). This approach provides a conservative analysis of annoyance-related vibration impacts.

As described under *Damage to Structures*, above, worst-case PPV vibration levels at the homes closest to the solar project site are expected to be between 0.006 in/sec (for a post driver at 500 feet) and 0.026 in/sec (for a vibratory roller at 130 feet). These vibration levels are below the Caltrans “strongly perceptible” criterion for vibration-related annoyance (i.e., PPV of 0.1 in/sec). The solar project does not propose construction within 60 feet of an inhabited residence or within 15 feet of an uninhabited structure; therefore, Community Plan Mitigation Measure 5.13-6 would not apply to the solar project. Therefore, annoyance-related vibration impacts would be less than significant for the solar project site, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

Vibration is generated when energy is imparted into the ground, such as during the use of heavy ground-disturbing construction equipment (i.e., a pile drive, an excavator, etc.). Project operations would not involve the use of ground-disturbing equipment, and the project would not include any major permanent sources of vibration. Some mechanical equipment installed at the project site could cause localized vibration that might be perceptible at close range (e.g., to someone standing on or adjacent to the individual equipment pads), but this equipment would all be located at least 500 feet from the

nearest homes (with the solar arrays located approximately 500 feet from the nearest home and the substation located approximately 1,000 feet from the nearest home). For these reasons, there would be no perceptible vibration at off-site properties. This impact would be less than significant, consistent with the Community Plan EIR conclusion. Therefore, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning and site reclamation would begin immediately after the 35-year lifespan of the solar project, expected in 2058, and be restricted to the permitted daytime hours specified in the MCC (e.g., 7:00 a.m. to 6:00 p.m. weekdays). Vibration levels generated by decommissioning activities would be similar to those associated with project construction because they would use similar types of heavy construction equipment operating over the same project area. Therefore, as with construction, damage-related vibration impacts from decommissioning would be less than significant and annoyance-related vibration impacts would be less than significant for the solar project site, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

An evaluation of vibration impacts associated with the portion of the solar project located on the lands outside of the Community Plan is included in the analysis above.

Off-Site Mitigation Site

The proposed project would be required to prepare a Habitat Conservation Plan (HCP) which would include the establishment of an off-site mitigation site in an area of 1,498 acres located south of the solar project site. No construction or development activity would take place as a result of the establishment of the mitigation site. Therefore, there would be no impact related to vibration at the off-site mitigation site; impacts would be less than those identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Construction

Damage to Structures

Similar equipment as proposed for use at the solar project site would be used at the PG&E substation site, except that the post driver would not be used. The PG&E substation improvements would be approximately 500 feet from the nearest residential structure.

Referring to Table 3.13-17, the most vibration-intensive piece of equipment proposed for construction at the PG&E substation site would be a vibratory roller, which is assumed to operate anywhere on the PG&E substation site. Therefore, an analysis of a vibratory roller at a distance 500 feet provides a reasonable worst-case assessment for construction-related vibration effects from the PG&E substation site.

At a distance of 500 feet, the PPV vibration level from a vibratory roller would be approximately 0.008 in/sec. As noted above, structures in the neighborhood east of the PG&E substation site are conservatively assumed to fall under Caltrans' "older residential structures" category, with a damage criterion of 0.3 in/sec PPV for continuous/frequent intermittent sources of vibration, such as construction activity. Therefore, the estimated vibration level from a vibratory roller at the nearest residential structures to the PG&E substation site would be well below the damage criterion (i.e., PPV of 0.3 in/sec) for "older residential structures."

Based on the estimated vibration levels presented above, the equipment proposed for the PG&E substation site would result in vibration levels that would be below the applicable criterion at the nearest off-site residential uses. Note that project construction equipment would typically be operating even farther from off-site structures than 500 feet, resulting in even lower vibration levels. Therefore, vibration levels from the most vibration-intensive project construction activities proposed for the PG&E substation site would not be expected to exceed the applicable damage criterion for nearby structures. Damage-related vibration impacts would be less than significant for the PG&E substation improvements, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Vibration-Related Annoyance

As described above, vibration-related annoyance is typically considered to be substantial if it is expected to result in sleep disturbance at nearby residences. Although most construction activities would occur during the daytime hours of 7:00 a.m. to 6:00 p.m., some evening construction may occur at the solar project site. However, evening construction would not occur at the PG&E substation. As described under *Damage to Structures*, above, worst-case PPV vibration levels at the homes closest to the PG&E substation site are expected to be 0.008 in/sec PPV (for a vibratory at 500 feet), which is well below the Caltrans "strongly perceptible" criterion for vibration-related annoyance (i.e., PPV of 0.1 in/sec). Therefore, because no evening or nighttime construction would occur at the PG&E substation site, and because even daytime construction would result in vibration levels below the applicable criterion, annoyance-related vibration impacts would be less than significant for the PG&E substation site, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

As described for the Solar Project, vibration is generated when energy is imparted into the ground, such as during the use of heavy ground-disturbing construction equipment (i.e., a pile drive, an excavator, etc.). Operations resulting from the project at the PG&E substation would not involve the use of ground-disturbing equipment, and no new major permanent sources of vibration would be installed at this location. Because of this, and because of the distance between the PG&E substation and the nearest residences, there would be no perceptible vibration at off-site properties generated from the PG&E substation. This impact would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, vibration-related damage and annoyance impacts for the whole project, including the off-site residential redesignation, solar project PG&E substation improvements, and off-site mitigation site, would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact NOI-3: For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR stated that the Project would not be located within an airport land use plan or within two miles of a public airport, public use airport or private air strip. No impact related to aircraft noise was identified in the previous EIR.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The off-site residential redesignation site is not located within 2 miles of a public airport or public use airport. The nearest public use airport to this site is Los Banos Municipal Airport, located over 5 miles to the east. In addition, there are no private airstrips in the vicinity. Further, no actual development would occur in this area as a result of the project. As such, the proposed project would not expose people working in the off-site residential redesignation area to excessive noise levels from either a public airport or public use airport. There would be no impact related to public airports or private airstrips, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Solar Project Construction, Operation, and Decommissioning

The project site is not located within 2 miles of a public airport or public use airport. The nearest public use airport to the project site is Los Banos Municipal Airport, approximately 5 miles east of the project site. In addition, there are no private airstrips in the project vicinity. As such, the proposed project would not expose people working in the project area to excessive noise levels from either a public airport or public use airport. There would be no impact related to public airports or private airstrips, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Noise effects related to aircraft noise for the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

The off-site mitigation site is not located within 2 miles of a public airport or public use airport. The nearest public use airport to this site is Los Banos Municipal Airport, located almost 5 miles to the northeast. In addition, there are no private airstrips in the vicinity. Further, no actual development would occur in this area as a result of the project. As such, the proposed project would not expose people working in the off-site mitigation area to excessive noise levels from either a public airport or public use airport. There would be no impact related to public airports or private airstrips, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The PG&E Substation site is not located within 2 miles of a public airport or public use airport. The nearest public use airport to this site is Los Banos Municipal Airport, located over 5 miles to the east. In addition, there are no private airstrips in the vicinity. Thus, as described above, the proposed project would not expose people working in the project area to excessive noise levels from either a public airport or public use airport. There would be no impact related to public airports or private airstrips, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, there would be no impact related to public airports or private airstrips for the whole project, including the solar project, PG&E substation improvements, off-site residential redesignation, and off-site redesignation site, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

3.13.3 References Cited

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3.14 Population and Housing

This section identifies and evaluates the project's potential impacts on population and housing. This section also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site General Plan amendment are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis; however, no questions or concerns related to population and housing were raised in the responses to the NOP.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.14.1 Existing Conditions

Environmental Setting

Regional Setting

Merced County, located in California's Central Valley, includes the cities of Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced within its approximately 1,980 square miles. The county is bounded on the north by Stanislaus County, with Madera and Mariposa counties to the east, Fresno County to the south, and San Benito and Santa Clara Counties to the west. The U.S. Census Bureau estimates the population for the county was 286,461 in 2021 (U.S. Census Bureau 2021a). The population of the county was 255,793 in 2010 (U.S. Census Bureau 2021a), indicating that the county population increased by 30,668 (approximately 12 percent).

The U.S. Census Bureau defines a *household* as a person or group of persons living in a housing unit, as opposed to persons living in group quarters such as dormitories, convalescent homes, or prisons. The estimated number of households in the county in July 2021 was approximately 81,306, with an average household size of about 3.29 persons per household (pph), which is larger than California's average of 2.94 pph (U.S. Census Bureau 2021a and 2021b). The U.S. Census Bureau estimates that there were 89,320 housing units in Merced County in 2021 (U.S. Census Bureau 2021a). Merced County had 4,319 vacant units and a vacancy rate of 4.9 percent in 2020 (California Department of Finance 2020). In addition, 1,017 building permits were issued in Merced County in 2021 (U.S. Census Bureau 2021a).

Employment in the county is driven primarily by agriculture, with the county consistently ranking as one of the state's top-five producers of milk and cream, chicken, almonds, alfalfa, cattle and calves, silage, and tomatoes and home to processing facilities for the Ernest and Julio Gallo Winery, Hilmar Cheese, Ingomar Packing Company, and Foster Farms (County of Merced [County] 2013). The U.S. Bureau of Labor Statistics reports that unemployment in the Merced statistical area in 2022 was approximately 7.7 percent, with unemployment in "Mining, Logging, and Construction" around 3.5 percent (U.S. Bureau of Labor Statistics 2022a). The national unemployment rate was approximately 3.7 percent (U.S. Bureau of Labor Statistics 2022b).

Solar Project Site

The solar project site is located on approximately 1,741 acres of vacant land in an unincorporated part of the county at the southwest corner of the intersection of State Route (SR) 33/SR 152 and Interstate (I) 5. No housing or employment facilities currently exist at the site. A residential subdivision and recreational vehicle (RV) park abuts the solar project site's northern boundary. The solar project site is located on predominantly undeveloped non-native annual grassland. The solar project site includes land designated as Urban Community (approximately 1,180 acres) and Agricultural (approximately 561 acres) under the *2030 Merced County General Plan*. The Urban Community designation is associated with the *Villages of Laguna San Luis Community Plan* (County 2008). The Community Plan designates the solar project site for various residential, commercial, and park uses. Approved in 2008, the Community Plan allows for the development of several villages with residential, mixed-use, and commercial uses, as well as schools, all of which would be focused around a village center on 6,200 acres. The allowable development would include approximately 15,895 residential units; 1.44 million square feet of retail commercial space; 2.85 million square feet of office, research-and-development, and light industrial space; elementary, middle, and high schools; and municipal utilities. Open spaces and parks are also included (County 2008). At the time of this SEIR, none of the developments in the Community Plan had been built or applied for. The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming.

The unincorporated city of Santa Nella is approximately 2.4 miles north of the solar project site, and the city of Los Banos is located approximately 6 miles to the east.

PG&E Substation

The existing PG&E Los Banos Substation occupies approximately 37 acres of land west of the residential subdivision and RV park, approximately 0.2 mile from the solar project site. No housing is located on the site, and no full-time employees work at the site.

Off-Site Mitigation Site

The off-site mitigation site is located on approximately 1,498 acres of undeveloped land 5 miles south of the solar project site. The site consists of grassland habitat and no existing development is located on the site.

Off-Site Residential Redesignation Area

The population and housing setting at the off-site residential redesignation area is described in Chapter 3 of the Community Plan EIR, incorporated by reference, on page 3-1. As described in that discussion, the off-site residential redesignation area is used primarily for active and fallowed

agricultural production (e.g., alfalfa, hay, oats, vineyards, orchards) and cattle and sheep grazing. This discussion accurately describes the current existing setting at the residential redesignation area.

Regulatory Setting

State

Sustainable Communities Strategy and Senate Bill 375. Senate Bill (SB) 375, adopted in 2008, requires preparation of a Sustainable Communities Strategy (SCS) as part of the Regional Transportation Plan (RTP). The Merced County Association of Governments (MCAG) prepared the *2022 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)*, which was adopted on August 18, 2022, for the 2046 horizon year. The RTP/SCS is a long-range planning document that focuses on transportation system capacity, regional infrastructure needs, and planned growth patterns, as defined by local cities and the County. The plan includes goals, objectives, and actions for growth and investment through the horizon year while simultaneously meeting federal and State requirements. The land use scenario for the RTP/SCS emphasizes controlled concentric growth, largely within the limits of the respective general plans of local jurisdictions within Merced County, focusing development on empty lots within city limits and gradual growth with a direct connection to established neighborhoods. The RTP/SCS land use scenario is consistent with the County's Regional Housing Needs Allocation (RHNA) (discussed below).

Housing Element Law. The RHNA is a process established under the State Housing Element Law that requires cities in California to plan for the future development of new housing units to meet their share of regional housing needs. Housing needs for each region in the state are determined by the California Department of Housing and Community Development (HCD) and submitted to Councils of Government for allocation to local jurisdictions. MCAG adopted its State-mandated RHNA plan at a Governing Board meeting held on November 17, 2022. The regional housing need determination from HCD of 22,620 units, as distributed by income category, is reflected in MCAG's 2022 RHNA plan and shown below in Table 3.14-1.

Table 3.14-1. Regional Housing Need Allocation for Merced 2023–2032

Income Level	Percent	Housing Need
Very Low	24.4	5,516
Low	16.7	3,780
Moderate	17.4	3,930
<i>Subtotal of Affordable Units</i>		<i>13,226</i>
Above Moderate ^a	41.5	9,394
Total	100	22,620

Source: Merced County Association of Governments. 2022. *Draft Regional Housing Need Allocation (RHNA) Plan: Merced County Region (Cycle 6 (June 30, 2023–January 31, 2032))*. Available: https://www.mcagov.org/DocumentCenter/View/3750/MCAG-RHNA-Plan_PUBLIC-DRAFT_09142022?bidId=. Accessed: November 19, 2022.

Notes:
^a The four income categories relative to Merced County's area median income (AMI) are as follows: very low (< 50 percent of AMI), low (50–80 percent of AMI), moderate (80–120 percent of AMI), and above moderate (120+ percent of AMI).

Local

2016–2024 Merced County Housing Element Update. All California cities and counties are required to have a Housing Element included in their general plans that establishes housing objectives, policies, and programs in response to community housing conditions and needs. The Housing Element also provides a framework for the community’s longer-term approach to addressing its housing needs. The following goals and policies from the Merced County Housing Element Update would be applicable to the project:

- **Goal HE-1.** To provide for a broad range of housing types and densities to meet the needs of all residents of the unincorporated area.
 - **Policy 1.2.** The County shall ensure that there are adequate sites available to meet its regional housing needs allocation of 4,456 units (542 extremely low, 543 very low, 775 low, 711 moderate, and 1,885 above moderate).
 - **Policy 1.4.** The County shall allow the conversion of agricultural and other rural land, including antiquated subdivisions, into housing uses only where a clear and immediate need is demonstrated based on anticipated growth, availability of public services and facilities, and taking into account available vacant land within the community.

Villages of Laguna San Luis Community Plan

The Villages of Laguna San Luis Community Plan (Villages CP), adopted in September 2008, provides a long-range growth and development plan for approximately 6,200 acres located west of I-5 along SR 152 and SR 33 in western Merced County. The Villages CP includes policies and guidance for the establishment of a new community that can accommodate growth and market demands while ensuring adequate public services and facilities and compatibility with the surrounding environment. The Village CP allows for unused density to be transferred to other areas, stating that “if residential areas are built out at the lower end of the allowable densities, the unused density could be transferred to other areas within the plan, subject to approval by the County and supplemental environmental analysis, if necessary. This would continue to allow the maximum total of 15,895 residential units (EDAW 2007).

The Community Plan includes the following policies that are applicable to population and housing:

- **Goal 1.0.** The development of housing units for a wide variety of income ranges to address the needs of all those working in the community.
 - **Policy 1.A.5.** Provide for a wide variety of housing types, by allowing small units, such as zero lot line, manufactured, and mobile home subdivisions within low and medium density residential land use categories.
 - **Policy 1.A.6.** Provide for apartments in medium-density and high-density residential land use categories and within village centers.

3.14.2 Environmental Impacts

This section describes the proposed project’s potential impacts on population and housing. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

Methods for Analysis

Criteria from Appendix G of the CEQA Guidelines were used to determine whether the proposed project would have a significant impact related to population and housing. This analysis considers whether substantial population and household growth would occur with implementation of the project and whether this growth can be considered substantial with respect to remaining growth potential in the county. A qualitative impact assessment was based on a review of applicable data from the U.S. Census Bureau, U.S. Bureau of Labor Statistics, and other sources.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

Would the project:

- Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Impacts Not Evaluated in Detail

Displacement of Existing People or Housing. All components of the project site are located on undeveloped land; the project would not demolish any residential housing or displace residents. The project would result in *no impact* related to the displacement of housing; therefore, this impact is not evaluated further.

Impacts and Mitigation Measures

Impact POP-1: 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)? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts on population and housing that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.2-1 and 5.2-2 on pages 5.2-5 and 5.2-6 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that the temporary increase in construction employment associated with buildout of the Community Plan would not generate substantial new population growth in the Community Plan area or the need for substantial new housing for construction workers. Construction workers do not typically relocate or change residences when assigned to a new construction site, and the project would draw construction workers from adjoining regions. The Community Plan EIR also found that buildout of the Community Plan would not involve the construction of any facilities that would accommodate additional growth above and beyond what is planned for by the project or by existing adopted land use plans. Therefore, the Community Plan EIR concluded that impacts on population and housing would be less than significant.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change for the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; installation of communication equipment, electrical distribution/transmission infrastructure, and substation equipment; development of public utility facilities; and construction of ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to redesignate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct construction of housing, nor would it generate new population growth. It would allow the County to maintain affordable housing (i.e., medium-density/high-density) residential development capacity and meet its RHNA allocation in accordance with the County Housing Element and State law (as described above under *Housing Element Law*). Although the proposed off-site residential redesignation would increase planned density within the residential redesignation area, it would not change the overall medium-density/high-density residential capacity of the approved Community Plan. Instead, it would redistribute already-approved medium-density/high-density residential capacity to a different area within the Community Plan area. As shown in Table 3.11-1 and 3.11-2 in Section 3.11, *Land Use and Planning*, there is more than enough acreage within the off-site residential redesignation to accommodate the additional medium/high-density housing needed to off-set the development of the solar project. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan. The off-site residential redesignation area and the larger Community Plan area remain free of residential development as they existed when the County certified the Community Plan EIR. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

The solar project would construct and operate a 200-megawatt (MW) alternating-current (AC), ground-mounted solar photovoltaic (PV) power plant. Construction of the PV power plant would require a maximum of 400 temporary construction workers who would work in phases over approximately 15 months. Because these would be short-term construction jobs, and because the county has a higher unemployment rate than the nation (i.e., a 3.5 percent unemployment rate in the employment category that includes construction), it is likely that construction workers would be drawn from local areas within the county. It is unlikely that construction workers would permanently relocate to the area for temporary employment. If some should relocate, they could be accommodated within the estimated 4,319 vacant units in the county. Furthermore, 11 hotels are located in Los Banos, 6 miles from the project site; eight are located in Santa Nella, approximately 2.5 miles north of the project site (TripAdvisor 2022a and 2022b). These could also serve the temporary workforce that project construction would require. Therefore, impacts from construction

of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

The solar project would not construct any residential units and therefore would not result in a direct increase in population. Operation of the solar project would require up to eight operations and maintenance workers who would travel to the site on a daily basis. These workers would most likely be drawn from the local workforce. If not, the increase would not significantly exceed anticipated growth in the county. The county grew by 12 percent in the last decade.

Roads constructed as part of the solar project would be limited to an internal road network necessary for maintenance and operation of the solar facility and would not connect to urban areas in a way that would facilitate a population increase. The solar project would be interconnected to existing PG&E power grid infrastructure and would supply renewable solar energy to existing public utilities, municipal utilities, or large private consumers of power; therefore, the solar project would not extend electric distribution infrastructure to new areas in a way that would facilitate development and an increase in population. Therefore, impacts from operation of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning and site reclamation of the solar project site would begin immediately after the 35-year lifespan of the solar project, expected in 2060, and is expected to take approximately 12 months. Decommissioning would not involve the construction of new housing units or the introduction of new population. The number of on-site workers for decommissioning would be similar to the number described in *Construction*. Because onsite work associated with decommissioning and site reclamation would be short-term, it is likely that these workers would be drawn from local areas within the county. As described above in *Construction*, the county currently has vacant units as well as nearby hotels which could also serve the temporary workforce, and it is reasonable to assume that the County will continue to have vacant units and hotels in 2060 as well. In addition, there are two approved communities in Merced County that could provide housing at the time of decommissioning: Villages of Laguna San Luis (the Villages) Community Plan, which has a buildout capacity of 15,865, and the Fox Hills Golf Course Community Plan, which has capacity of up to 3,460 dwelling units. Therefore, impacts from decommissioning of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Population and housing impacts associated with the portion of the solar project site that is outside of the Community Plan boundary are included in the analysis above.

Off-Site Mitigation Site

The project would establish an off-site mitigation site of approximately 1,498 acres of grassland habitat. No new land uses would be constructed on the off-site mitigation site; rather, the site would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other species, as necessary. Therefore, establishment of the mitigation site would not induce, either directly or indirectly, any population or employment growth in the area; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The proposed project would include transmission system improvements to the substation in order to connect it to the solar project and facilitate the delivery of power. Construction workers associated with these improvements are included in the up to 400 workers described above. There would be no increase in the number of permanent employees beyond existing levels. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, the combined population impacts of the entire proposed project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site components, would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

3.14.3 References Cited

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3.15 Public Services

This section identifies and evaluates the project's potential impacts on public services. It also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site General Plan amendment are analyzed at a program level.

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. No questions or concerns related to public services were raised in the responses to the NOP.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.15.1 Existing Conditions

Environmental Setting

Regional Setting

Fire Protection

The solar project site, the PG&E substation site, the off-site mitigation site, and the off-site residential redesignation area are all located in an unincorporated part of southwestern Merced County. According to the California Department of Forestry and Fire Protection (CAL FIRE) Fire Hazard Severity Zone (FHSZ) mapping, these areas are all within an area that has been mapped as a Moderate FHSZ, with the exception of the off-site mitigation site, which includes a small portion of a High FHSZ (CAL FIRE 2022). As described in Section 3.20, *Wildfire*, these areas are all within a CAL FIRE–designated State Responsibility Area (SRA), which means that CAL FIRE has primary responsibility for fire protection services in these areas (CAL FIRE 2013). The closest CAL FIRE station is Station #73, located approximately 3 miles west of the solar project site at 31011 West Gonzaga Road. The Merced County Fire Department also provides fire protection services for unincorporated Merced County. The Merced County Fire Department operates 19 stations and has 77 career personnel; it also contracts with CAL FIRE (Merced County Fire Department 2022). The nearest Merced County Fire Department station is Station #72, located approximately 2.75 miles north of the solar project site at 29190 West Centinela Avenue.

Police Protection Services

The Merced County Sheriff's Office has the primary responsibility for protecting life and property in unincorporated areas of Merced County, including the solar project site, the PG&E substation site, the off-site mitigation site, and the off-site residential redesignation area. The closest office is approximately 6.5 miles from the solar project site at 445 I Street in Los Banos (Merced County Sheriff's Office 2022).

The California Highway Patrol is responsible for law enforcement on I-5, State Route (SR) 33, SR 165, and SR 152, which pass near the project site. The nearest California Highway Patrol office is approximately 6 miles east of the project site at 706 West Pacheco Boulevard in Los Banos (California Highway Patrol 2022).

Schools

Merced County is served by 19 school districts, which are overseen by the Merced County Office of Education (K12 Academics 2022). The solar project site, PG&E substation site, off-site mitigation site, and off-site residential redesignation area are within the Los Banos Unified School District, which serves approximately 11,242 students from transitional kindergarten (TK) through 12th grade in nine elementary schools, one TK center, two junior high schools, two comprehensive high schools, one alternative high school, and one alternative education center (Los Banos Unified School District 2022a and 2022b). The closest school to the solar project site is Romero Elementary School, approximately 2.8 miles north of the solar project site at 13500 West Luis Road in Santa Nella. Romero Elementary is a public school with approximately 236 students in kindergarten through 5th grade. It has 10 full-time-equivalent teachers and is part of the Gustine Unified School District (U.S. News 2022).

Parks

As described in Section 3.16, *Recreation*, Merced County is resource rich in terms of regional parks and other recreational facilities, with more than 114,000 acres of park and recreational space. Several large recreational spaces are in the vicinity (i.e., approximately 6 miles from) the solar project site.

Libraries

The Merced County Library serves the project area, including the solar project site, PG&E substation site, off-site mitigation site, and off-site residential redesignation area, through 12 public libraries as well as bookmobile services in the county (Merced County Library 2022a). The Merced County Library makes available more than 226,106 items (e.g., books, periodicals, DVDs, audiobooks, eBooks) at local libraries and provides access to more than 3 million additional resources through connections with the San Joaquin Valley Library System (Merced County Library 2022b). The closest library to the solar project site is the Santa Nella Branch Library, located approximately 2.5 miles north of the project site at 29188 West Centinela Avenue in Gustine. Los Banos Public Library is approximately 6.75 miles east of the solar project site at 1312 South 7th Street in Los Banos.

Solar Project Site

The solar project site is located on approximately 1,741 acres of land in the western portion of the county at the southwest corner of the intersection of State Route (SR) 33/SR 152 and I-5; the site can be accessed via Billy Wright Road. The majority of the solar project site is fallowed agricultural

land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming. The solar project site does not generate a demand for public services because it does not contain any existing uses, population, or employment.

PG&E Substation

The existing PG&E Los Banos Substation is located approximately 0.2 mile west of the solar project site. The PG&E substation is located on approximately 37 acres of land south of SR 152 and accessible via Jasper Sears Road. It is developed with electrical substation equipment and generates a negligible demand for public services.

Off-Site Mitigation Site

The off-site mitigation site is located 5 miles south of the solar project site in an area of approximately 1,489 acres of undeveloped grassland. The off-site mitigation site is located immediately south of the Los Banos Reservoir. Like the solar project site, the off-site mitigation site does not generate a demand for public services because it does not contain any existing uses, population, or employment.

Off-Site Residential Redesignation Area

The off-site residential redesignation area is an area of approximately 202.8 acres located adjacent to the solar project site, within the Villages at Laguna San Luis Community Plan area and toward the southern and eastern portions of the Billy Wright landfill. As described in Chapter 3 of the Community Plan EIR on page 3-1, and incorporated by reference, the off-site residential redesignation area is used primarily for active and fallowed agricultural production (e.g., alfalfa, hay, oats, vineyards, orchards) and cattle and sheep grazing. This discussion accurately describes the current existing setting at the residential redesignation area, which has not changed appreciably since adoption of the Community Plan EIR. Like the solar project site, the off-site residential redesignation area does not generate a demand for public services because it does not contain any existing uses, population, or employment.

Regulatory Setting

Federal

Occupational Safety and Health Administration

The Occupational Safety and Health Administration (OSHA) is the federal agency responsible for ensuring worker safety. Its regulations provide standards for safe workplaces and work practices. The OSHA Emergency Action Plan Standard, 29 Code of Federal Regulations, requires an employer to have an emergency action plan when required by certain OSHA standards. It must be in writing, kept in the workplace, and available to employees for review; however, an employer with 10 or fewer employees may communicate the plan orally to employees. The plan must include procedures for reporting a fire or other emergency as well as procedures for emergency evacuation, including the type of evacuation and exit route assignments. It must also include procedures to be followed by employees who remain to operate critical plant operations before they evacuate.

State

California Fire Code

The California Code of Regulations, Title 24, is a compilation of building standards, including fire safety standards, for residential and commercial buildings. The California Building Standards Code serves as the basis for the design and construction of buildings in California; the California Fire Code is a component of the California Building Standards Code. Typical fire safety requirements of the California Fire Code include the installation of sprinklers in buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas. Section 507.1 relates to water supply capabilities for fire protection and includes specifications for water tanks.

State Responsibility Areas (Public Resources Code Section 4102)

SRAs are defined by Public Resources Code Section 4102 as areas of the state in which CAL FIRE has determined that the financial responsibility for preventing and suppressing fires lies with the State of California. SRAs are lands in California where CAL FIRE has legal and financial responsibility for wildfire protection. Typically, SRAs are unincorporated areas of a county that are not federally owned. They have wildland vegetation, fewer than three habitable structures per acre, and watershed or range/forage value. Where SRAs contain built-environment resources or development, the local government agency assumes responsibility for fire protection.

Senate Bill 50

Senate Bill 50 (funded by bonds sold under Proposition 1A, approved in 1998) limits the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development and provides instead for a standardized developer fee. SB 50 generally provides for a 50/50 State and local school facilities funding match. SB 50 also provides for three levels of statutory impact fees. The application level depends on whether State funding is available, whether the school district is eligible for State funding and whether the school district meets certain additional criteria involving bonding capacity, year round school and the percentage of moveable classrooms in use.

California Government Code, Section 65995(b), and Education Code Section 17620

SB 50 amended the California Government Code Section 65995, which contains limitations on Education Code Section 17620, the statute that authorizes school districts to assess development fees within school district boundaries. Government Code Section 65995(b)(3) requires the maximum square footage assessment for development to be increased every two years, according to inflation adjustments. In January 2022, the State Allocation Board (SAB) approved increasing the allowable amount of statutory school facilities fees (Level I School Fees) to \$4.79 per square foot of assessable space for residential development of 500 square feet or more, and to \$0.78 per square foot of chargeable covered and enclosed space for commercial/industrial development (State Allocation Board 2022).

Mitigation Fee Act (California Government Code 66000-66008)

Enacted as AB 1600, the Mitigation Fee Act requires a local agency establishing, increasing, or imposing an impact fee as a condition of development to identify the purpose of the fee and the use to which the fee is to be put. The agency must also demonstrate a reasonable relationship between the fee and the purpose for which it is charged, and between the fee and the type of development plan on which it is to be levied. The Act came into force on January 1, 1989.

Local

Merced County Unified Development Ordinance

The Merced County Unified Development Ordinance, Title 18 of the Merced County Code, is intended to promote the orderly development of the county; promote and protect the public health, safety, comfort, convenience, morals, peace, and general welfare; protect the character, social diversity, and economic vitality of neighborhoods; and ensure the beneficial development of the county. Section 18.34.030 of the ordinance provides standards, including height and type standards for fences, walls, and hedges, for all types of development within the county.

2030 Merced County General Plan

The *2030 Merced County General Plan*, adopted in December 2013, provides a vision for long-range physical and economic development of the county, provides strategies and specific implementing actions, and establishes a basis for judging whether specific development proposals and public projects are consistent with the County of Merced's (County's) plans and policy standards. The County General Plan includes the following policies that are applicable to public services:

- **Goal PFS-6:** Ensure the provision of timely and adequate law enforcement through proper management and staffing of the Sheriff's Department in Merced County.
- **Goal PFS-7:** Provide adequate fire and emergency medical facilities and services to protect county residents from injury and loss of life and protect property from fire.
 - **Policy PFS-7.7:** Fire Facility Fees (RDR [Regulation and Development Review]/JP [Joint Partnerships with the Private Sector/FB [Financing and Budgeting]). Require new development to pay its fair share of public facility fees for new fire station facilities, equipment, and the staffing necessary to maintain the County's service standards in that area. New development may also be required to create or join a special assessment district or other funding mechanism to pay the costs associated with the operation of a fire station.
 - **Policy PFS-7.9:** Fire Safety Standard Compliance (RDR). Ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the Uniform Fire Code and other State and local ordinances.
 - **Policy PFS-7.10:** Adequate Fire Flows for Agricultural Facilities (RDR) Require all agricultural commercial facilities to have adequate water supply and fire flows to meet the Uniform Fire Code and other state and local ordinances.
- **Goal PFS-8:** Coordinate with school districts, colleges, and universities to provide for the educational and literary needs of Merced County residents.
- **Policy PFS-8.7:** Incompatible Land Uses near Schools (RDR/IGC [Inter-Governmental Coordination]). Coordinate with school districts to reduce the effects of incompatible land uses and noise adjacent to school facilities.

Villages of Laguna San Luis Community Plan

The Villages of Laguna San Luis Community Plan, adopted in September 2008, provides a long-range growth and development plan for approximately 6,200 acres of land located west of Interstate 5 along SR 33 and SR 152 in western Merced County. The Community Plan includes policies and guidance for the establishment of a new community that can accommodate growth and market demands while ensuring adequate public services and facilities as well as compatibility with the surrounding environment. The Community Plan includes the following policies and objectives that are applicable to public services:

- **Goal 1.0:** Public facilities and services are provided that adequately meet the needs of the Villages CP.
 - **Objective 1.A:** A community that is adequately served by law enforcement facilities and services.
 - **Policy 1.A.1:** Coordinate with the Merced County Sheriff's Department (MCSO) to ensure that adequate law enforcement facilities and services are provided to meet the needs of the Villages CP as development occurs.
 - **Objective 1.B:** A community that is adequately served by fire protection facilities and services.
 - **Policy 1.B.1:** Coordinate with the Merced County Fire Department (MCFD) to ensure that adequate fire protection facilities and services are provided to meet the needs of the Villages CP as development occurs.
 - **Objective 1.C:** A community that is adequately served by educational facilities and services.
 - **Policy 1.C.1:** Coordinate with the Los Banos Unified School District (LBUSD) to ensure that adequate educational facilities and services are provided to meet the needs of the Villages CP as development occurs.
 - **Objective 1.E:** A community that is adequately served by library services and facilities.
 - **Policy 1.E.1:** Ensure that adequate library facilities and services are provided to meet the needs of community residents as development occurs through the use of temporary or "mobile library" facilities together with the phased construction of a permanent library.
 - **Policy 4.B.1:** Minimize hazards to development from wildland fires on adjacent lands through compliance with the California Division of Forestry State Responsibility Area (SRA) Fire Safe Regulations (Title 14, Chapter, Articles 1-5).
 - **Implementation Measure 4.B.1.a:** All implementation plans, tentative subdivision maps, discretionary permits, and building permits will be reviewed against the fire safety policies in Section 4.3, Community Design Plan.

3.15.2 Environmental Impacts

This section describes the proposed project's potential impacts on public services. It explains the methods used to determine the impacts of the project and lists the thresholds used to conclude whether an impact would be significant.

Methods for Analysis

Potential impacts on public services are evaluated by assessing the potential for the project to increase demand for public services, based on goals established by service providers where available, and comparing the ability of the service provider/public facility to serve the project and accommodate any associated increase in demand. A determination is then made as to whether existing facilities are capable of meeting the demand of the project and, if not, if expansion of existing facilities could cause an adverse environmental effect. The analysis is based on a review of city documents, state maps, and other available sources. Potential impacts on public services resulting from potential project population growth inducement in the county is discussed in Chapter 5, *Other Required CEQA Considerations*.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would have a significant effect if it would result in any of the conditions listed below.

Would the project:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:
 - Fire protection?
 - Police protection?
 - Schools?
 - Parks?
 - Other public facilities?

Impacts and Mitigation Measures

Impact PS-1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: fire protection? police protection? schools? parks? other public facilities? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts to public services that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.6-1, 5.6-2, 5.6-3, 5.6-4, 5.6-5, and 5.6-6 on pages 5.6-13 - 20 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that the Community Plan buildout would not result in significant impacts to law enforcement facilities, services, and equipment; fire protection and

emergency medical facilities, services, and equipment; public school facilities and services; neighborhood and community parks; federal, state, and county recreation areas; or public and quasi-public facilities.

The Community Plan EIR found that buildout of the Community Plan would not result in physical impacts to law enforcement facilities or services as these were adequate to serve the Community Plan area. Impacts related to fire protection were also found to be less than significant, as Community Plan policies would ensure fire code compliance and an implementation plan would ensure adequate funding to serve the area. The Community Plan EIR found that impacts to public school facilities would be less than significant as they would be fully mitigated by supplemental fees. Open space and recreational areas to be included within the Community Plan area were found to supply sufficient recreational space to reduce any impacts to community, state, or regional parks to a less than significant level. Therefore, the Community Plan EIR concluded that impacts to public services would be less than significant. Conditions at and around the redesignation area have not changed since certification of the Community Plan EIR in a way that would change this analysis, as no development has occurred within the Community Plan area since certification of the Community Plan EIR.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change covering the solar project site to create a *Utility-Scale Solar Overlay*. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

A high-density/medium-density residential use of the off-site residential redesignation area instead of a low-density residential use would not change the conclusion in the Community Plan EIR because the overall high-density/medium-density residential capacity of the Community Plan area would not change. Existing fire and police protection services, schools, and library facilities would be able to service the area. With regard to parks, as shown in Table 3.15-1, the solar project would result in a 36.2-acre decrease in Village Center Park and Community Park land within the Community Plan area. As noted in Community Plan EIR Impact 5.6-5, “under the proposed project, approximately 172.5 acres (net) of neighborhood and community parks would be provided on-site, which exceeds the County’s Quimby Act standards for parkland dedication of 3 acres per 1,000 persons (134.3 acres). In addition, the proposed project includes a comprehensive network of open space and recreational land uses that would provide an additional 134.3 acres of open space resources.” Therefore, even with a reduction in park acreage of 36.2 acres, the park acreage would exceed the requirement by approximately 2 acres (136.3 acres compared to the required 134.3 acres). However, these decreases could also be offset in implementation of the redesignation area if housing were to be pursued at a future time. Impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Table 3.15-1. Open Space and Recreational Acreage in Community Plan Area With Development of the Solar Project

Land Use Type^a	Existing Acreage in Community Plan Area (acres)	Acreage in Community Plan Area with Development of Solar Project (acres)	Change (acres)
Village Center Park	8	3.8	-4.2
Community Park	73.5	41.5	-32

^a This table lists only park land use designations that would be affected by the solar project (i.e., those located within the solar project site).

Source: Tiffany Ho, Deputy Director of Planning, Merced County Community & Economic Development Dept. April 14, 2023—personal communication.

Construction

Fire Protection

Construction of the solar project would not result in materially increased demand for fire protection services that would lead to the construction of new or physically altered facilities. The workforce for construction of the solar project would not exceed 400. These temporary workers would work in phases over approximately 15 months. As discussed in Section 3.14, *Population and Housing*, the workers would most likely be drawn from the county’s existing labor pool and would therefore already be factored into demand estimates of the Merced County Fire Department. The solar project site is in a Moderate FHSZ. It would connect to existing PG&E power grid infrastructure without passing through any High or Very High FHSZ. Likewise, the gen-tie line would not cross through any High or Very High FHSZ for its connection to the substation. A CAL FIRE station and a Merced County Fire Department station are both within 3 miles of the solar project site; at this distance, personnel would be able to quickly respond to any incidents at the solar project site. Therefore, construction the solar project would not materially increase the demand for fire protection services or result in the need for new or physically altered fire protection facilities; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Police Protection Services

The workforce for construction of the solar project would not exceed 400. These temporary workers would work in phases over approximately 15 months. The solar project construction site would be secured with a 6- to 10-foot chain link perimeter fence and screened. Manual swinging gates would control ingress/egress at the solar project site. The site would also be remotely monitored so that security breaches would be reported.

As discussed in Section 3.14, *Population and Housing*, the workers would most likely be drawn from the county’s existing labor pool. Therefore, the workers would already be factored into demand estimates of the Merced County Sheriff’s Office and the California Highway Patrol. Therefore, construction of the solar project would not materially increase the demand for police protection services and would not result in the need for new or physically altered police protection facilities; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Schools

The solar project site is within the Los Banos Unified School District; however, construction of the solar project would not include the construction of any residential units with households that would generate new students. In addition, as discussed in Section 3.14, *Population and Housing*, temporary construction workers and employees would most likely be drawn from the county's existing labor pool; therefore, the children of these individuals would already be factored into school district growth estimates. Therefore, construction of the solar project would not result in the need for new or physically altered school facilities; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Parks

As described in Section 3.16, *Recreation*, Merced County is resource rich in terms of regional parks and other recreational facilities. Construction of the solar plant would not include the construction of residential units or generate new residents that would negatively affect such resources. Although the temporary workforce may choose to use the available park space, the employees would likely come from the county's existing labor pool and will therefore already be included in the estimates for park services in the county. Furthermore, the County currently exceeds its acreage goal with respect to parks. Any additional use due to construction of the solar project would not result in the need for new or physically altered park space; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Libraries

As discussed above under schools, construction of the solar project would not include the construction of any residential units. The solar project's temporary construction workers would most likely be drawn from the county's existing labor pool and therefore already be included in the estimates for library services in the county. Therefore, construction of the solar project would not result in the need for new or physically altered library facilities; impacts from construction of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

Fire Protection

Solar power is expected to account for almost half of all new U.S. electric generating capacity in 2022 (U.S. Energy Information Administration 2022). Although fires at solar installations are rare, they have occurred in recent years, particularly at residential installations (PV Magazine 2020). Studies have shown that photovoltaic (PV) solar panels have a low failure rate, with only five out of 10,000 (0.05 percent) solar panels developing fire-related faults (National Renewable Energy Laboratory 2017). However, fires at solar farms rarely start at the panels; rather, they are more likely to start at the cables and connectors going to the panels or at DC combiner boxes or inverters (Firetrace International 2022).

Operation of the solar project would not result in materially increased demand for fire protection services or lead to the construction of new or physically altered fire protection facilities. The solar project would be designed to minimize fire risks to the greatest extent feasible; for example, the rows of solar panels would be up to 15 feet apart to ensure access for fire equipment and enable prompt containment in the unlikely event of a fire. Furthermore, the project would conform to the standards related to fire protection and emergency water set forth in Public Resources Code Section 4290, Title 14. Specifically, one 5,000-gallon water tank would be permanently installed in the northwest portion of the solar project site to store water for fire flow, as well as irrigation of the vegetated screen, in accordance with Section 507.1 of the California Fire Code. All internal and perimeter roads would conform to County and California Fire Code standards. The battery energy storage system (BESS) would be temperature controlled and equipped with electrically controlled fire suppression systems, including sprinklers or dispersants with flame-retardant chemicals. An air-conditioning and fire suppression system would maintain ambient operating temperatures consistent with the fire protection strategies and safety standards provided in *Lithium-Ion Batteries Hazard and Use Assessment*, published in 2016 by the National Fire Protection Association (NFPA).

Project operations would comply with OSHA's Emergency Action Plan Standard, 29 Code of Federal Regulations 1910.38, and NFPA 855, Standard for the Installation of Stationary Energy Storage Systems. All personnel working on-site would receive instruction and training regarding an emergency action plan to address all emergencies that may be reasonably expected to occur at the BESS, include fire. Therefore, because the solar project site would be in a Moderate FHSZ, in proximity to fire protection services, and designed and operated to minimize fire hazards, operation of the solar project would not materially increase the demand for fire protection services or result in the need for new or physically altered fire protection facilities; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Police Protection Services

Operation of the solar project would not materially increase the demand for police protection services or lead to the construction of new or physically altered facilities. The solar project would be secured with a 6- to 10-foot chain link perimeter fence as well as a vegetated screen that would be installed in accordance with Section 18.34.030 of the Merced County Unified Development Ordinance. Manual swinging gates would control ingress/egress at the solar project site. The site would also be remotely monitored so that security breaches would be reported. The plant would comply with North American Energy Reliability Corporation and Western Electricity Coordinating Council requirements for regulatory control and security systems. Furthermore, as discussed in Section 3.12, *Population and Housing*, the eight employees for project operations would most likely be drawn from the county and therefore already factored into demand estimates of the Merced County Sheriff's Office and the California Highway Patrol. Therefore, solar project operations would not materially increase the demand for police protection services or result in the need for new or physically altered facilities; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Schools

Operation of the solar project would require up to eight employees. As discussed in Section 3.12, *Population and Housing*, the eight employees for project operations would most likely be drawn from the county and therefore already be factored into school district growth estimates for the Los Banos Unified School District, which serves the solar project site, or another school district in which the employees reside. Therefore, operation of the solar project would not result in the need for new or physically altered school facilities; the impact of project operation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts beyond those identified in the previous EIR and no additional mitigation would be required.***

Parks

As described in Section 3.16, Recreation, Merced County is resource rich in terms of regional parks and other recreational facilities. Operation of the solar project would require up to eight employees. Although these employees may choose to use the available park space, employees will likely come from the county's existing labor pool and will therefore already be included in the estimates for park services in the county. Furthermore, the County currently exceeds its acreage goal with respect to parks. Any additional use due to operation of the solar project would not result in the need for new or physically altered park space; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Libraries

The solar project's eight operational employees would most likely be drawn from the county's existing labor pool and therefore already be included in the estimates for library services in the county. Therefore, operation of the solar project would not result in the need for new or physically altered library facilities; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning and site reclamation of the solar project site would begin immediately after the 35-year lifespan of the solar project, expected in 2060, and is expected to take approximately 12 months. Decommissioning would not involve the construction of new housing units or the introduction of new population which could increase demand on public services. The number of on-site construction workers for decommissioning would be similar to the number described in *Construction*, discussed above. Similarly, workers involved in decommissioning the site are likely to be drawn from the county's existing labor pool; therefore, their need for public services would be included in existing estimates. Impacts to public service from decommissioning would be similar to those of project construction. Therefore, decommissioning would not result in the need for new or physically altered public services facilities; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site outside of the Community Plan is approximately 561 acres and is designated in the County general plan as Agricultural. Development of this land was not considered in the Community Plan EIR. The proposed project includes a General Plan amendment and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay. Construction, operation, and decommissioning of the portion of the solar project located on the land outside of the Community Plan boundary would have similar impacts as those lands within the Community Plan boundary, and its impacts are therefore accounted for in the analysis above. For these reasons, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Off-Site Mitigation Site

Fire Protection

The proposed project would establish an off-site mitigation site in an area of approximately 1,498 acres located south of the solar project site. No new land uses would be constructed on the off-site mitigation site; rather, the site would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. The majority of the mitigation site would be within a Moderate FHSZ, with only a small portion within a High FHSZ. All mitigation lands would adhere to County ordinances regarding fire protection, fire breaks, and fire management. Therefore, establishment of the off-site mitigation site would not materially increase the need for fire protection services or require new or physically altered fire protection facilities; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Police Protection Services

Similar to the discussion above regarding fire protection, no construction or development activity would take place as a result of the establishment of the off-site mitigation site, nor would new residents be generated that would increase the need for police protection services. Fencing would be maintained around the perimeter of the mitigation site to reduce vandalism and theft. Therefore, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Schools

Establishment of the off-site mitigation site would not generate students or result in the need for new or physically altered school facilities; therefore, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Parks

The off-site mitigation site would be established to protect wildlife in the area. It would not serve as a recreational area. Furthermore, it would not increase the population or use of the available park space in the county. Establishment of the off-site mitigation site would not result in the need for new or physically altered park space. Therefore, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Libraries

The off-site mitigation site would not induce, either directly or indirectly, any population growth and therefore would not result in the need for new or physically altered library facilities; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Fire Protection

Similar to the solar project site discussed above, the substation site would be located in a Moderate FHSZ and in proximity to fire protection services. The substation improvements would include moving the substation fence to accommodate additional equipment and an additional 10.3 acres of PG&E-owned property, which would be graveled and fenced. This additional acreage is also in a Moderate FHSZ. As with the solar project described above, the substation improvements would also abide by applicable County and California fire codes. Therefore, because the substation improvements site would be located in a Moderate FHSZ, in proximity to fire protection services, and operated in compliance with applicable fire codes, construction and operation of the PG&E substation improvements would not materially increase the demand for fire protection services or result in the need for new or physically altered fire protection facilities. Impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Police Protection Services

Similar to the solar project, the substation improvements would most likely draw a workforce from the county's existing labor pool. Therefore, the workers would already be factored into demand estimates of the Merced County Sheriff's Office and the California Highway Patrol. Therefore, construction of the PG&E substation improvements would not materially increase the demand for police protection services or result in the need for new or physically altered police protection facilities; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

For the same reasons, operation of the substation with the improvements would not materially increase the demand for police protection services or lead to the construction of new or physically altered facilities. The substation would continue to be monitored and secured with a perimeter fence with lighting. Therefore, operation of the substation with the improvements would not

materially increase the demand for police protection services or result in the need for new or physically altered facilities. Impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Schools

Similar to the solar project discussed above, the substation improvements would not generate students or the need for new or physically altered school facilities. Although the temporary workforce may have children attending school, employees will likely come from the county's existing labor pool and would therefore already be factored into school district growth estimates for the Los Banos Unified School District (which serves the solar project site), or another school district in which the employees reside. Impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Parks

Similar to the solar project discussed above, the substation improvements would not include the construction of residential units or generate new residents that would negatively affect recreational resources. Although the temporary workforce may choose to use the available park space, employees will likely come from the county's existing labor pool and will therefore already be included in the estimates for park services in the county. Furthermore, the County currently exceeds its acreage goal with respect to parks. Any additional use would not result in the need for new or physically altered park space; impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Libraries

Similar to the solar project discussed above, employees associated with the substation improvements would most likely be drawn from the county's existing labor pool and therefore already included in estimates for library services in the county. Therefore, the PG&E substation improvements would not result in the need for new or physically altered library facilities; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site would not result in the need for new or physically altered public services facilities. Impacts would be less than significant, consistent with the Community Plan EIR conclusion. As a result, when considering the project as a whole, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

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3.16 Recreation

This section identifies and evaluates the project's potential impacts on recreation. This section also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site General Plan amendment are analyzed at a program level.

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. No questions or concerns related to recreation were raised in the responses to the NOP.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.16.1 Existing Conditions

Environmental Setting

Regional Setting

Merced County, located in California's Central Valley, includes the cities of Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced within its approximately 1,980 square miles. The county is resource rich in terms of parks and other recreational facilities, with more than 114,000 acres of park and recreational space. As shown in Figure 3.16-1, *Recreational Resources*, many of these parks and recreational spaces are located in the vicinity (i.e., approximately 6 miles from) the solar project site.

The San Luis Reservoir State Recreation Area, located north of the solar project site, abuts the western border of the parcel where the existing PG&E Los Banos Substation is located (California State Parks 2022). The San Luis Reservoir State Recreation Area consists of more than 27,000 acres and provides opportunities for camping, boating, picnicking, hiking, and a variety of other recreational uses (California Department of Parks and Recreation 2022a and 2022b).

The O'Neill Forebay Wildlife Area is approximately 1.5 miles north of the PG&E Los Banos Substation. It covers 700 acres and has 8 miles of artificial waterways and riparian habitat. The area allows for wildlife viewing and hunting and is home to black-tailed deer, cottontail, and 126 species of birds (California Department of Fish and Wildlife 2022a).

The Cottonwood Creek Wildlife Area is approximately 2.75 miles northwest of the substation. It covers approximately 6,300 acres of steep oak-grassland and steep hill grassland and is home to wild pigs, black-tailed deer, gray fox, and 100 species of birds. Wildlife viewing and hunting are permitted in the area (California Department of Fish and Wildlife 2022b).

The Volta State Wildlife Area is approximately 4.5 miles northeast of the solar project site. It covers 3,800 acres where wildlife viewing and hunting are permitted. The area is home to beaver, coyotes, cottontails, and 150 species of birds, including large numbers of waterfowl and shorebirds (California Department of Fish and Wildlife 2022c).

Los Banos is approximately 6 miles east of the solar project site. The City of Los Banos operates 35 neighborhood parks as well as community and pocket parks, totaling approximately 162 acres (City of Los Banos 2009). With the addition of specialized-use and regional park space, Los Banos has approximately 191 acres of park space. No changes to regional parks and recreation facilities have occurred within the Community Plan area since certification of the Community Plan EIR.

Solar Project Site

The solar project site is on approximately 1,741 acres of vacant land in an unincorporated part of the county at the southwest corner of the intersection of State Route (SR) 33/SR 152 and Interstate (I) 5. The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming. No park or recreational space exists on the solar project site, and the site does not generate a demand for parks or recreational space.

PG&E Substation

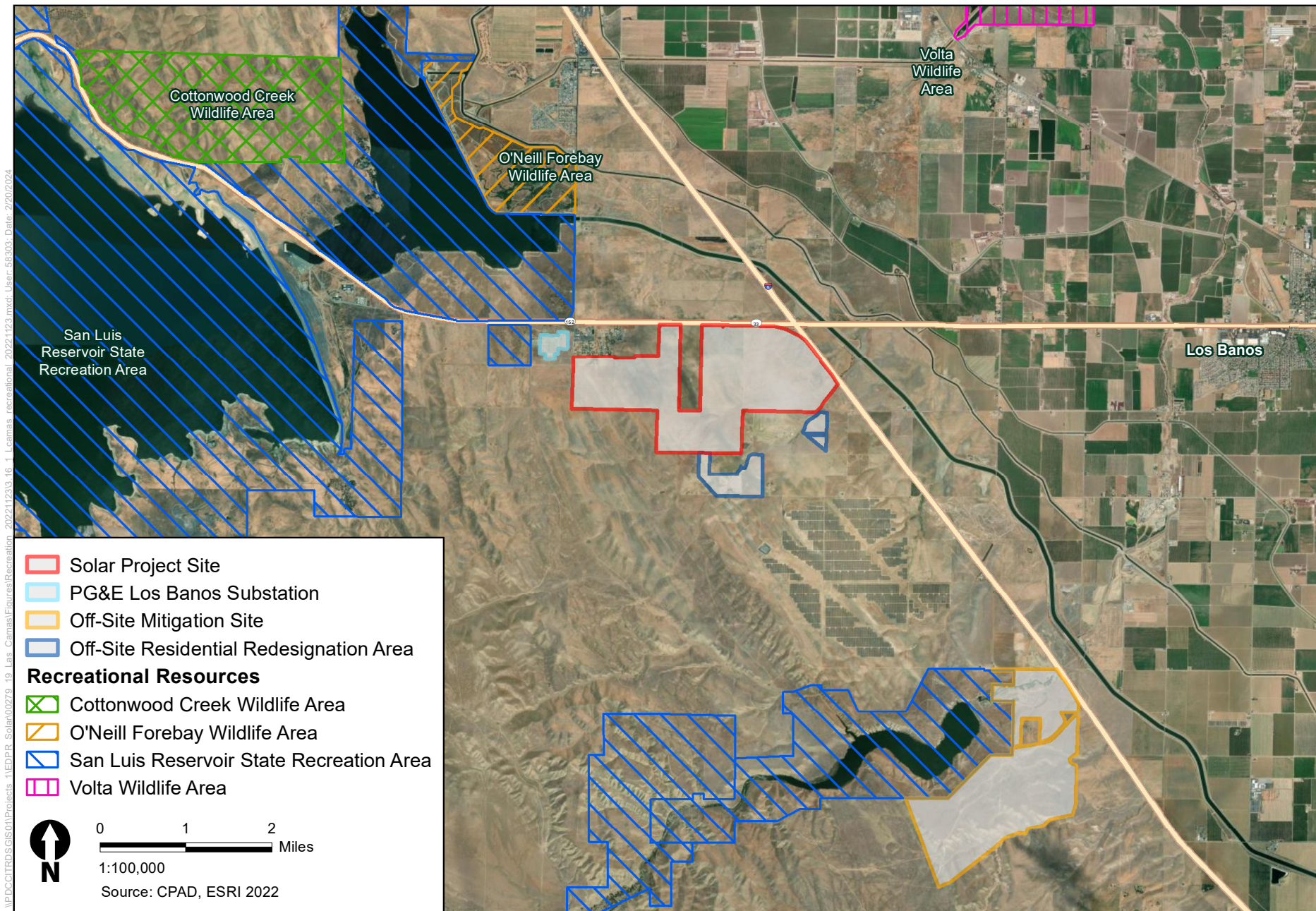
The existing PG&E Los Banos Substation occupies approximately 37 acres of land west of a residential subdivision and recreational vehicle (RV) park, approximately 0.2 mile from the solar project site. No park or recreational space exists on the substation site, and the site does not generate a demand for parks or recreational space. The western border of the parcel on which the substation is located borders the San Luis Reservoir State Recreation Area.

Off-Site Mitigation Site

The off-site mitigation area is located on approximately 1,498 acres of undeveloped land 5 miles south of the solar project site, bordering the San Luis Reservoir State Recreation Area. No park or recreational space exists on the site, and the site does not generate a demand for parks or recreational space.

Off-Site Residential Redesignation Area

The off-site residential redesignation area is located south of the solar project site on approximately 202.8 acres of undeveloped grassland within the Villages at Laguna San Luis Community Plan area. The off-site residential redesignation area is south and east of portions of the Billy Wright Landfill. No park or recreational space exists on the site, and the site does not generate a demand for parks or recreational space. This discussion accurately describes the current setting at the off-site residential redesignation area, which has not been developed since certification of the Community Plan EIR.



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**Figure 3.16-1
Recreational Resources**

Regulatory Setting

Local

Merced County General Plan

The Merced County General Plan, adopted in December 2013, guides the physical development and character of the county, including unincorporated areas. It sets out the pattern of future land use within the unincorporated areas including parklands. The County of Merced (County) values its 114,000 acres of park and recreational facilities and sets out goals and policies in the Recreation and Cultural Resources Element to preserve, enhance, and expand these resources (County 2013). The following goals and policies from the Recreation and Cultural Resources Element would be applicable to the project:

- **Goal RCR-1.** Preserve, enhance, expand, and manage Merced County’s diverse system of regional parks, trails, recreation areas, and natural resources for the enjoyment of present and future residents and park visitors.
 - **Policy RCR-1.1: Public Recreation Land Use (RDR [Regulation and Development Review]/MPSP [Infrastructure and Service Master Plans, Strategies, and Programs]).** Encourage the continuation and expansion of existing public recreation land uses, including, but not limited to, public beaches, parks, recreation areas, wild areas, and trails.
 - **Policy RCR-1.3: Neighborhood, Community, and Regional Parkland Standards (RDR).** Encourage a minimum of three acres of neighborhood, community, or regional parkland per each 1,000 persons in the county by:
 - a. Working with other agencies and private interests to provide for adequate neighborhood, community, and regional parkland and facilities;
 - b. Actively participating in the planning of projects that have regional recreation benefits;
 - c. Encouraging and supporting local agency efforts to achieve their objectives for providing local parkland. All local providers should seek to provide at least three acres of parkland for each 1,000 persons.
 - d. Actively seeking available regional, State, and federal grant funds for acquiring, developing, and maintaining regional parks; and
 - e. Encouraging and supporting other public agencies and private groups in the development of recreation facilities that are consistent with the 2030 Merced County General Plan.

Villages of Laguna San Luis Community Plan

The Villages of Laguna San Luis Community Plan (Villages CP), adopted in September 2008, provides a long-range growth and development plan for approximately 6,200 acres of land located west of I-5 along SR 152 and SR 33 in western Merced County. The Villages CP includes policies and guidance for the establishment of a new community that can accommodate growth and market demands while ensuring adequate public services, facilities, recreational space, and compatibility with the surrounding environment.

The community plan includes the following policies that are applicable to recreation facilities:

- **Policy 1.B.1.** The community shall be developed through establishment of neighborhoods with convenient access to shopping, schools, and recreational amenities.
- **Policy 1.A.2.** Design Villages with residential neighborhoods that are accessible to employment, schools, shopping, recreation, and other societal necessities.
- **Policy 1.C.2.** Reinforce neighborhood identity and character by placing open space, recreation, and community facilities in conjunction with Neighborhood Centers.
- **Policy 1.H.7.** Define community gathering places, recreation fields, play areas, passive enclosures, and pedestrian pathways by combining earthform manipulation with the thoughtful placement of canopy, screening, accent and groundcover vegetation.
- **Policy 1.I.9.** Design openings in barriers such as walls, fences, or buildings for community-wide pedestrian circulation ways to connect residential, shopping, school, work and recreation areas.
- **Goal 2.0.** Open space areas are provided for passive and active recreational opportunities.
 - **Objective 2.A.** A community-wide park and recreation system which consists of neighborhood, community, and Village Center parks which meet a wide range of active and passive recreational needs, as designated conceptually in the Land Use Plan, Section 4.1.
 - **Policy 2.A.1.** Provide active neighborhood and community park lands and facilities in accordance with County criteria of a minimum of 3 acres of improved park land for each 1000 persons.
 - **Policy 2.A.2.** Locate neighborhood parks of 2 to 4 acres in size in the centers of residential neighborhoods which are typically within 1/4 mile or a 5-minute walk of most homes.
 - **Policy 2.A.3.** Locate community level parks adjacent to middle schools to promote joint use of facilities and to serve as community focal points. As a part of Implementation Plans, evaluate specific active and passive recreational uses within community level parks to allow for full and efficient utilization of parks and coordinate specific location of conceptually designated community level parks with Los Banos Unified School District to promote joint use of parks at appropriate school sites.
 - **Policy 2.A.4.** Provide well landscaped and shaded passive park areas of 3 to 4 acres in size in Village Centers as open space amenities and to promote social interaction.

3.16.2 Environmental Impacts

This section describes the proposed project's potential impacts on recreation. It explains the methods used to determine the impacts of the project and lists the thresholds used to conclude whether an impact would be significant.

Methods for Analysis

Criteria from Appendix G of the CEQA Guidelines were used to determine whether the proposed project would have a significant impact related to recreation. Impacts were evaluated qualitatively, based on the potential for the project and construction activities to affect parks and recreational resources in relation to the significance criteria below. Impacts were assessed based on review of applicable data from the U.S. Census Bureau, California Department of Parks and Recreation, and available reports and sources.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Impacts Not Evaluated in Detail

Include Recreational Facilities or Require the Construction or Expansion of Recreational Facilities. The project consists of the proposed Las Camas solar facility, improvements to the PG&E Los Banos Substation, establishment of an off-site mitigation site, and an off-site General Plan amendment to redesignate a 202.8-acre area from low-density residential to high-density/medium-density residential. The project does not include the construction or expansion of recreational facilities. The off-site mitigation site is intended to protect wildlife; it would not serve any recreational purposes. Therefore, the project would result in **no impact** related to the construction or expansion of recreational facilities, and this impact is not evaluated further.

Impacts and Mitigation Measures

Impact REC-1: Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts on recreational resources that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.6-5 and 5.6-6 on pages 5.6-19 and 5.6-20 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the community plan would not result in the physical deterioration of any recreation facilities because there would be enough on-site and off-site recreational areas available to accommodate the project's recreational demand. In addition, the community plan would establish a funding mechanism to provide for the maintenance of on-site recreational facilities. Therefore, the Community Plan EIR concluded that impacts on recreational resources would be less than significant.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change for the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; installation of communication equipment, electrical distribution/transmission infrastructure, and substation equipment;

development of public utility facilities; and construction of ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to redesignate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

A high-density/medium-density residential use of the off-site residential redesignation area instead of a low-density residential use would not change this conclusion, as the same lands would be disturbed and the overall high-density/medium-density residential capacity of the Community Plan area would not change. In addition, conditions at and around the redesignation area have not changed since certification of the Community Plan EIR in a way that would change this analysis, as no development has occurred within the Community Plan area since certification of the Community Plan EIR as shown in Figures 3.10-2 and 3.10-3 in Section 3.10, *Hydrology and Water Quality*, land in and around the project site was largely undeveloped, or in agriculture, when the Community Plan EIR was prepared, and remains so today. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts beyond those identified in the previous EIR would result from construction, and no additional mitigation would be required.***

Construction

The solar project would construct and operate a 200-megawatt (MW) alternating-current (AC), ground-mounted solar photovoltaic (PV) power plant. As discussed in Section 3.14, *Population and Housing*, the project would not include construction of any residential units and, therefore, would not result in a direct increase in population that would increase the use and physical deterioration of existing neighborhood and regional parks.

Construction of the PV power plant would require a maximum of 400 temporary construction workers who would work in phases over approximately 15 months. As discussed in Section 3.14, *Population and Housing*, these workers are likely to be drawn from the county's existing labor pool, and thus, would already be factored in to existing park and recreation use estimates. The County has a goal of a minimum of 3 acres of parkland and recreational facilities per 1,000 persons. The U.S. Census Bureau estimates the population in Merced County in 2021 was 286,461 (U.S. Census Bureau 2021). The county has approximately 114,000 acres of park and recreational facilities, meaning it is currently averaging approximately 398 acres per 1,000 persons, well exceeding the goal. Given the supply of parkland in the County, any increase in the use of regional recreational space would be unlikely to result in substantial physical deterioration of the resources. Therefore, impacts from construction of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

Operation of the solar project would require up to eight employees, who would travel to the site on a daily basis. As discussed in Section 3.14, *Population and Housing*, these employees are likely to be drawn from the county. However, even if the employees should relocate from outside the county, the county currently exceeds its parkland acreage goal, providing ample recreational space for up to eight families of additional potential park users. Therefore, impacts from operation of the solar

project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning and site reclamation at the solar project site would begin immediately after the 35-year lifespan of the solar project, expected in 2060. This is expected to take approximately 12 months. Decommissioning would not involve the construction of new housing units or the introduction of a new population that could increase the use or deterioration of recreational facilities. The number of on-site construction workers for decommissioning would be similar to the number described under *Construction*, above. Similarly, workers involved in decommissioning would most likely be drawn from the county's existing labor pool and thus, would already be factored in to existing park and recreation use estimates. Therefore, impacts from decommissioning of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Recreation impacts associated with the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

The project would establish an off-site mitigation site in an area of approximately 1,498 acres located south of the solar project site. No new land uses would be constructed on the off-site mitigation site; rather, the site would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. Establishment of the off-site mitigation site would not create housing or employment that would induce, either directly or indirectly, any population growth or increase the deterioration of recreational resources. Therefore, impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR no additional mitigation would be required.***

PG&E Substation Improvements

The proposed project would include transmission system improvements for the substation in order to connect it to the solar project and facilitate the delivery of power. There would be no increase in the number of permanent employees beyond existing levels. Construction workers associated with these improvements are included in the up to 400 workers described above, and their potential impacts on recreational facilities would likewise not result in substantial physical deterioration of the resources; therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, impacts from each project component, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, would be less than significant, consistent with the Community Plan EIR conclusion. When considering the whole project, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

3.16.3 References Cited

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3.17 Transportation

This section identifies and evaluates the project’s potential impacts on transportation, including conflicts with a program, plan, ordinance or policy addressing the circulation system, vehicle miles traveled (VMT), safety, and emergency access. This section also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site General Plan amendment are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Relevant technical documentation used in this analysis includes:

- Transportation Impact Analysis. KD Anderson & Associates, Inc. February 2024 (Appendix 3.17-1)

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. The issues concern preparation of a traffic study and the methodology used for traffic data collection, queuing, hazards, and construction-related impacts; truck traffic projections; consideration of traffic impacts (specifically at Billy Wright Road); access for landfill trucks during construction; and the need for an encroachment permit from the California Department of Transportation (Caltrans).

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.17.1 Existing Conditions

Environmental Setting

Circulation System

Regional Setting

Regional highway access to the project site is provided by State Route (SR) 152, which also connects to Interstate (I) 5 to the west and SR 99 and SR 165 to the east. Each of these regional highways is shown in Figure 3.17-1 and described below.

SR 152 is a principal arterial roadway that generally links the southern Santa Cruz County and Santa Clara County area with I-5 and SR 99 in Madera County. West of Los Banos, SR 152 is a four-lane limited-access expressway. Through Los Banos, SR 152 is a four-lane conventional highway. Near Billy Wright Road, SR 152 is configured with two 12-foot-wide travel lanes in each direction and a 36-foot-wide median area. Paved shoulders adjoin the median area (i.e., 4 feet wide) and the area outside the travel lanes (i.e., 8 to 12 feet wide). The posted speed limit is 65 miles per hour (mph) in the area of the project site.

The most recent daily traffic counts reported by Caltrans indicate that, in 2019, SR 152 carried an annual average daily traffic (AADT) volume of 33,600 vehicles per day from the SR 33 junction to I-5 and 27,000 vehicles per day in the area east of the I-5 interchange. The daily traffic volume through Los Banos reaches 33,500 vehicles per day. Caltrans reports that trucks compose 17 percent of the daily traffic volume in the area near I-5 and 9 percent through Los Banos.

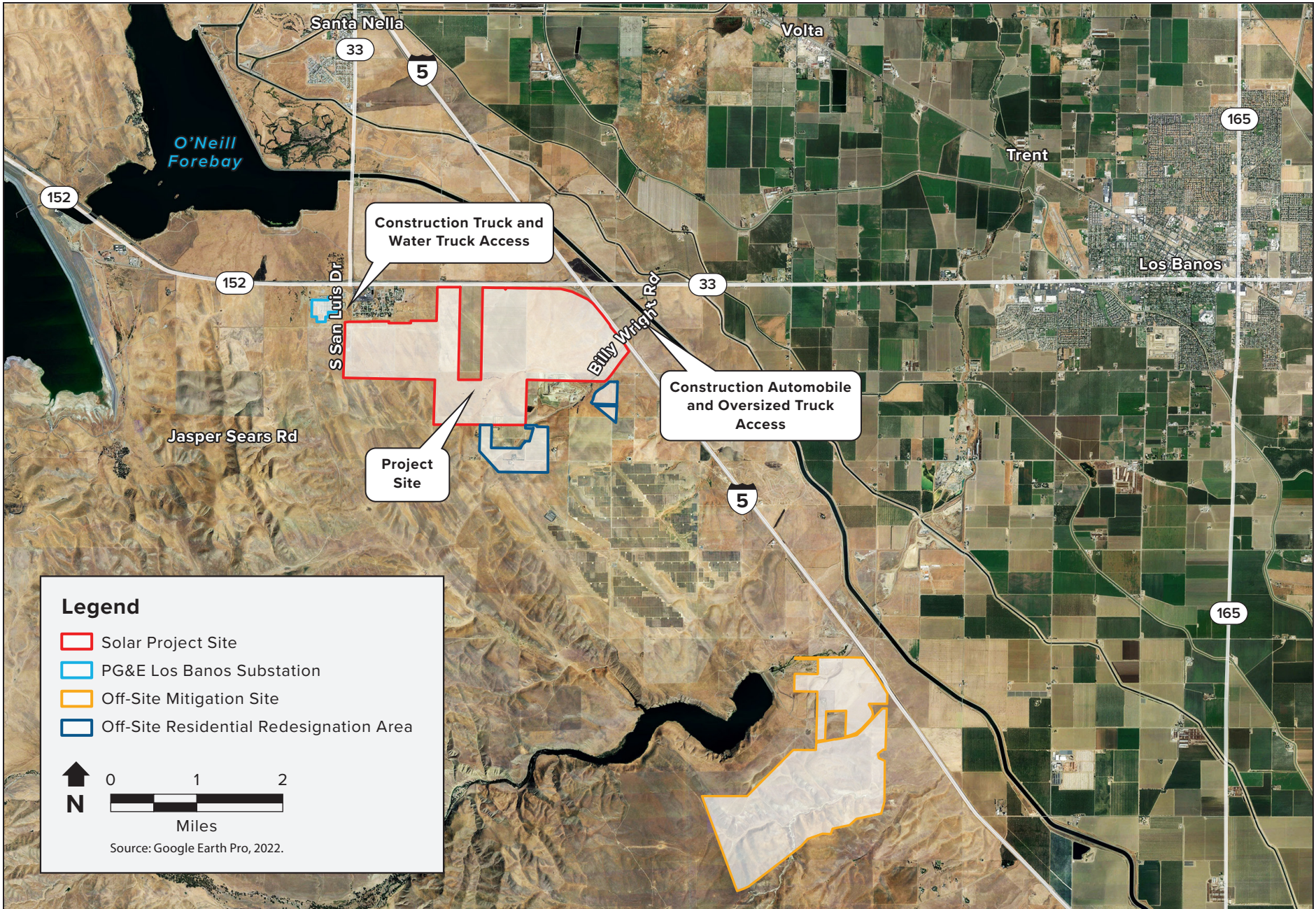
I-5 is a principal arterial roadway that traverses California from north to south. In the area of the project site, I-5 is a four-lane controlled-access freeway. The freeway is configured with two 12-foot-wide travel lanes in each direction and a 60-foot-wide median area. Paved shoulders adjoin the median area (i.e., 4 feet wide) and the area outside the travel lanes (i.e., 8 feet wide). The posted speed limit is 65 mph. The most recent daily traffic counts reported by Caltrans indicate that, in 2019, I-5 carried 41,500 vehicles per day between SR 152 and the SR 165 interchange, about 11 miles south of the project site. Caltrans reports that trucks compose 30 percent of the daily traffic volume in this area.

SR 33 is a principal arterial roadway that travels the Central Valley from its junction at U.S. 101 in Ventura County to its I-5 connection in San Joaquin County. The route is generally parallel to I-5 but does cross the interstate at several locations. In the area of the project site, north of SR 152, SR 33 is a two-lane conventional highway. The roadway has been widened to provide auxiliary turn lanes at key intersections in Santa Nella. The speed limit is 55 mph north of SR 152; the speed limit is posted at 40 mph in Santa Nella. The most recent daily traffic counts reported by Caltrans indicate that, in 2019, SR 33 carried 11,300 vehicles per day north of SR 152 and 12,900 vehicles per day south of the I-5 interchange. Caltrans reports that trucks compose 28 percent of the annual daily traffic volume in this area.

SR 165 is a principal arterial roadway that extends south from an interchange on SR 99 in Turlock, then continues south across Merced County and through the city of Merced to an interchange on I-5. SR 165 is a conventional two-lane highway in rural areas but widens to four lanes near its intersection with SR 152 in Los Banos. The posted speed limit is 65 mph on SR 165 between I-5 and Los Banos and 35 mph to 45 mph through Los Banos. The most recent daily traffic counts reported by Caltrans indicate that, in 2019, SR 165 carried 1,400 vehicles per day north of I-5, 4,300 vehicles per day at Los Banos, and 12,000 vehicles per day at the SR 152 intersection. Caltrans reports that trucks compose 7 to 9 percent of the annual daily traffic volume in this area.

Solar Project Site

The solar project site includes roughly 1,741 acres of undeveloped, privately owned land. Local access to the solar project site would be provided via a driveway on Billy Wright Road, which would connect the site with the SR 152/Billy Wright Road intersection. The southern terminus of San Luis Drive is directly north of the northwestern corner of the solar project site (Figure 2-3). This would provide temporary access to the solar project site during construction.



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Figure 3.17-1
Regional Circulation System

Billy Wright Road is a rural two-lane road that links SR 152 with Merced County's Billy Wright landfill. Billy Wright Road is designated a Minor Collector in the Merced County General Plan; the road right-of-way is 60 feet wide. Traffic counts conducted in May 2005 and reported in the Merced County General Plan Update EIR indicate that Billy Wright Road carries 240 vehicles per day south of SR 152. Traffic counts conducted for the proposed project in June 2021 indicate that Billy Wright Road carries 485 vehicles per day and that trucks compose 36 percent of the daily traffic.

San Luis Drive is a local Merced County road that extends south from the SR 152/SR 33 interchange in the area northwest of the project site. At its south end, San Luis Drive is a two-lane road with roughly 36 feet of pavement; on-street parking is prohibited. Traffic counts conducted for the proposed project in June 2021 indicate that San Luis Drive carries 280 vehicles per day just north of its intersection with W. Vista Grande Drive.

PG&E Substation

Local access to the PG&E substation is provided by Jasper Sears Road off Gonzaga Road.

Jasper Sears Road is a local Merced County road that extends south from a frontage road along SR 152 (i.e., Gonzaga Road) west of the SR 33/SR 152 interchange. At its north end, Jasper Sears Road is a two-lane road with roughly 20 feet of pavement. Based on the types of land uses served by this road, Jasper Sears Road is estimated to carry fewer than 100 vehicles per day.

Off-Site Residential Redesignation Area

The circulation system near the off-site residential redesignation area is the same as described above for the regional setting and solar project site. The off-site residential redesignation area would be served by I-5, SR 33, SR 152, SR 165, and Billy Wright Road.

Off-Site Mitigation Site

The circulation system near the off-site mitigation site is the same as described above for the regional setting and solar project site. The off-site mitigation site would be served by I-5, SR 33, SR 152, SR 165, and Billy Wright Road.

Existing Traffic Volumes

In addition to the daily traffic volume information discussed above for roadway segments, recent Caltrans traffic count data for the I-5/SR 152 ramps and the I-5/SR 165 ramps are provided in Table 3.17-1 for 2015–2016. Although similar data are not available for the SR 152/SR 33 interchange ramps, daily volumes are estimated from the SR 33 AADT and 2018 ramp intersection counts.

SR 152/Billy Wright Road Intersection

Morning (6:00 a.m. to 9:00 a.m.) and evening (4:00 p.m. to 6:00 p.m.) peak-hour traffic volume data for the SR 152/Billy Wright Road intersection are presented in Table 3.17-2. The majority of vehicles and trucks travel eastbound or westbound on SR 152. The SR 152/Billy Wright Road intersection handles very few vehicles and typically no trucks during peak periods. In addition, as shown in Table 3.17-2, under existing conditions, the volume of traffic at the SR 152/Billy Wright Road intersection is well below the minimum thresholds for peak-hour volumes on high-speed roads. Therefore, a traffic signal is not warranted at this intersection.

Table 3.17-1. Daily Traffic Volumes (2015–2016)

Location	Direction	Type	Ramps	Daily Volume
I-5/SR 152	Northbound	On-ramp	From WB SR 152	1,190
		Off-ramp	To WB SR 152	4,163
		On-ramp	From EB SR 152	2,542
		Off-ramp	To EB SR 152	226
	Southbound	On-ramp	From EB SR 152	4,121
		Off-ramp	To EB SR 152	2,126
		On-ramp	From WB SR 152	670
		Off-ramp	To WB SR 152	513
I-5/SR165	Northbound	Off-ramp	To SR 165	923
		On-ramp	From SR 165	420
	Southbound	Off-ramp	To SR 165	396
		On-ramp	From SR 165	977
SR 152/SR 33	Eastbound	Off-ramp	From SR 152	4,900 ^a
		On-ramp	To SR 152	1,260 ^a
	Westbound	Off-ramp	From SR 152	1,200 ^a
		On-ramp	To SR 152	5,600 ^a

Source: KD Anderson & Associates, Inc. 2023. *Transportation Impact Analysis*. December.

Notes:

I = interstate; SR = state route; WB = westbound; EB = eastbound

^a. Volumes estimated from 2018 peak-hour data and 2019 AADT on SR 33

Table 3.17-2. Peak-Hour Traffic Volumes – SR 152/Billy Wright Road Intersection

Turning Movement	Morning Peak-Hour Volume			Evening Peak-Hour Volume		
	Vehicles	Trucks	Total	Vehicles	Trucks	Total
SR 152 WB	869	90	959	466	46	512
SR 152 EB	141	55	196	1,176	64	1,240
SR 152 WB to Billy Wright Road	1	0	1	4	0	4
SR 152 EB to Billy Wright Road	2	0	2	7	0	7
Billy Wright Road to WB SR 152	2	0	2	1	0	1
Billy Wright Road to EB SR 152	3	0	3	5	0	5

Source: KD Anderson & Associates, Inc. 2023. *Transportation Impact Analysis*. December.

Notes:

SR = state route; WB = westbound; EB = eastbound

Alternative Transportation Modes

The Transit Joint Powers Authority Board for Merced County operates transit services in the county. *The Bus*, Merced’s regional transit system, delivers fixed-route service in major cities and serves rural communities. The Los Banos Corridor links the community with Merced, to the east, and extends as far west as the Merced College campus on SR 152, about 3.5 miles east of Billy Wright Road. This route runs on 1-hour headways from 7:44 a.m. to 7:44 p.m. Los Banos Dial-a-Ride

(i.e., *The Micro Bus*) provides demand-responsive transit within a service area that extends beyond Los Banos to Gustine and Santa Nella and includes the area of the proposed project. The Micro Bus runs from 6:00 a.m. to 7:30 p.m. on weekdays.

There are currently no dedicated bicycle facilities in the immediate area of the project site, but the Merced County Regional Bicycle Transportation Plan indicates that Class II bicycle lanes could be developed in the future on SR 33 from McCabe Road in Santa Nella south to the SR 152/SR 33 interchange. There are also no dedicated pedestrian facilities along SR 152 or Billy Wright Road in this area of rural Merced County, nor are there sidewalks on the streets within the residential neighborhood northwest of the project site.

Regulatory Setting

State

Senate Bill 743

Senate Bill (SB) 743 modified CEQA direction and requires local agencies to move from an analysis based on level of service (LOS) to evaluation of impacts based on vehicle miles traveled (VMT). LOS is a metric used to evaluate the performance of roadways and transportation elements, such as intersections, freeway entrances, and transit service, among others. LOS ranges from LOS A, free flow, with low volumes and high speeds, to LOS F, forced or breakdown flow, unacceptable congestion, stop-and-go. VMT refers to the total number of miles traveled by a motor vehicle in a region over a certain period of time, usually over a year. Because it relates to length of travel rather than traffic congestion, VMT is more closely correlated with greenhouse gas (GHG) emissions.

General guidance as to methods for calculating VMT and significance criteria are contained in the Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA*. The Merced County Association of Governments (MACG) released recommended VMT thresholds and implementation guidelines in September 2022, but at the time of this report, they have not been adopted by the County of Merced (County). However, although SB 743 eliminates LOS as a CEQA criteria, this can still be considered in terms of General Plan consistency and for transportation planning purposes. Section 3.17.2, *Environmental Impacts*, contains additional information about VMT under the *Methods for Analysis* subheading.

California Department of Transportation

Caltrans has authority over the state highway system, including freeways, interchanges, and arterial state routes. Caltrans approves the planning, design, and construction of improvements for all State-controlled facilities, including SR 152, which provides primary regional access to the project site.

In its *Vehicle Miles Traveled-Focused Transportation Impact Study Guideline*, Caltrans establishes operational objectives for highway performance, based on VMT and safety rather than LOS, while addressing impacts on alternative transportation modes. Caltrans plans/policies for state highways are also presented in the *SR 152 Transportation Concept Report*. The concept for SR 152 for the 20-year planning horizon is a four-lane expressway, although the report indicates that the current two-lane conventional highway would operate at LOS E to F through 2030.

Caltrans policy regarding applicable traffic controls is based on *Traffic Operations Policy Directive 13-02*. This directive requires that Caltrans consider the relative merits of alternative traffic controls when it becomes necessary to stop traffic on state highways. Roundabouts are the default intersection control, but all-way stops and traffic signals are to be considered. The policy directive requires preparation of an Intersection Control Evaluation to determine the preferred traffic control.

A Caltrans Encroachment Permit is required for improvements made to the state highway by private parties or local agencies, and the design of these improvements is subject to Caltrans approval.

Large trucks are permitted on designated facilities under the Surface Transportation Authority Act (STAA). Roadways to be added to designated routes are processed through Caltrans with evidence of the adequacy of each road and intersection for the trucks.

Local

Merced County Association of Governments

MCAG developed the 2022 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) for Merced County, which is a federally mandated, long-range transportation plan for the nine incorporated cities in Merced County and unincorporated areas. The RTP/SCS identifies the policies, projects, and programs necessary over a period of 20 or more years to maintain, manage, and improve the region's transportation systems and establishes goals and objectives for the future system. It also identifies the actions necessary to achieve these goals and describes a funding strategy and options for implementing the actions. The RTP/SCS is updated every 3 years. The present 2022 update covers the period from 2022 to 2046.

To coordinate local planning efforts with other regional, State, and federal agencies, as well as monitor and respond to policies that affect development and implementation of the RTP, MCAG prioritizes transportation projects in a Regional Transportation Improvement Program for federal and State funding. The process is based on each project's need, feasibility, and adherence to federal transportation policies.

The RTP's Regional Road network includes I-5, SR 33, and SR 152 through the study area. The following Tier I projects (i.e., projects that have a funding source) in this area are included in the RTP/SCS:

- **SR 152 Median Barrier:** This project would construct a median barrier within SR 152 near Los Banos from 0.8 mile west of Basalt Road to I-5.
- **STAA Truck Turning Radius Improvement:** This project would improve the truck turning radius near Los Banos at the SR 33 interchange and on I-5 at the SR 165 interchange.

MCAG also released recommended VMT thresholds and implementation guidelines in September 2022. At the time of this report, they have not been adopted by the County. Notwithstanding, the significance of the project's VMT impacts under MCAG guidelines is also assessed in this section.

Merced County General Plan

The County has jurisdiction over non-state roadways. The 2030 Merced County General Plan Circulation Element focuses on providing roadways for growing automobile demands and alternative modes of transportation. This requires improving those alternative modes through

regional coordination, improved funding, better land use and design, and fair pricing. The overarching goal of the circulation element seeks a balanced transportation system that moves people and goods in a safe and efficient way and minimizes environmental impacts, supports urban land uses, and serves rural needs. The following are two policies of the General Plan Circulation Element related to LOS standards:

- **Policy CIR-1.5: County Level-of-Service Standards.** Implement a countywide roadway system that achieves the following level-of-service (LOS) standards during peak traffic periods:
 - For roadways located within rural areas: LOS "C" or better.
 - For roadways located outside Urban Communities that serve as connectors between Urban Communities: LOS of "D" or better.
 - For roadways located within Urban Communities: LOS of "D" or better.
- **Policy CIR-1.6: Level-of-Service "E" Exception.** Allow LOS "E" or worse only on a minor component of the circulation system (such as a left-turn movement from a local roadway) if the major component of the circulation system (such as a through movement on a collector or arterial roadway) would be significantly compromised in the process of improving the level of service of the minor component.

Villages of Laguna San Luis Community Plan

The project site is located within the Villages of Laguna San Luis Community Plan area. The following circulation goals, policies, and objectives from the Community Plan are applicable to the proposed project:

- **Goal 1.0.** Meet projected traffic demands of the Villages CP and surrounding region with a comprehensive circulation system.
 - **Objective 1.A.** The roadway infrastructure within the Villages CP provides for the free and efficient movement of vehicular traffic.
 - **Policy 1.A.1.** Ensure that necessary transportation improvements will be implemented concurrent with development phasing to achieve General Plan level-of-service objectives.
 - **Policy 1.A.2.** Coordinate transportation planning for the Villages CP with Caltrans, MCAG, and other affected transportation planning entities in the region.
 - **Policy 1.A.3.** Implement design measures that expand the traffic-carrying capacity at intersections, (e.g. synchronized signals, right-turn lanes, additional travel lanes).
 - **Objective 1.B.** A hierarchical road network is established which effectively accommodates internal and external vehicle trips.
 - **Policy 1.B.1.** The Circulation system within the Villages CP will consist of a combination of Neighborhood Streets, Minor and Major Collector Streets, Arterial Streets, and Freeways adequate to serve project and cumulative traffic volumes.
 - **Policy 1.B.2.** The basic location of Freeways, Arterial Streets and Major and Minor Collector Streets identified in the Circulation Plan, Exhibit 11, shall be implemented with individual development phases as appropriate.

- **Policy 1.B.3.** The location of Neighborhood Streets and Minor Collector Streets not shown in Exhibit 11 shall be identified in future Implementation Plan approvals with each development phase.
- **Policy 1.B.4.** To ensure efficient and safe vehicle movement patterns, on-street parking and driveway access points shall conform with the standards identified in the Circulation Plan Statement, Section 4.4.4, and as shown in Figures 1 and 2, Roadway Design Standards.
- **Policy 1.B.5.** Discourage through traffic on residential streets within neighborhoods.
- **Policy 1.B.6.** All roadways shall be designed to satisfy the emergency access provisions outlined in Section 4.3.2.11, Fire Safety.
- **Objective 1.C.** The regional circulation needs of the Villages CP and surrounding area are satisfied through adequate state highway interchanges and freeways.
- **Policy 1.C.1.** The County shall enter into a Memorandum of Understanding (MOU) with Caltrans ensuring the appropriate design and funding of the proposed interchanges along SR-152 prior to the approval of the first Implementation Plan within the Community.
- **Objective 1.D.** The circulation system that serves the Villages CP is adequately financed to provide for the timely construction of necessary improvements as well as the on-going maintenance of the resulting infrastructure.
- **Policy 1.D.1.** All development projects within the Villages CP shall contribute their fair share of community-wide and regional circulation improvements as identified in Section 5.0 Implementation.
- **Policy 1.D.2.** Establish a "fair share" funding mechanism for those transportation improvements that are required due to traffic generated by more than one CP area.
- **Policy 1.D.3.** Establish an appropriate funding mechanism to provide for the on-going maintenance of the Villages CP circulation system.
- **Goal 2.0.** A comprehensive transportation network is provided which contains alternate modes of vehicular and non-vehicular travel.
 - **Objective 2.A.** Public transportation is easily accessible within the Villages CP.
 - **Policy 2.A.1.** Coordinate with the Merced County Transit (MCT), to ensure that adequate transit facilities and service will be provided and safe and convenient access to public transportation is achieved.
 - **Policy 2.A.2.** Transit improvements in the Villages CP will incorporate bus shelters and stops, as well as a mass transit center, as described in the Circulation Plan Statement, Section 4.4.4.
 - **Policy 2.A.3.** Provide a park and ride lot, in conjunction with the mass transit center to promote the use of the transit system and facilitate carpooling.
 - **Objective 2.B.** A combination of road-side bikeways and separate bikeways and trails within the Villages CP provides convenient circulation, allows ease of access, and acknowledges the importance of the pedestrian and bicyclist.
 - **Policy 2.B.1.** Implement bicycle and pedestrian routes which provide direct access between residential neighborhoods, schools, parks and commercial uses.

- **Policy 2.B.2.** Class I (off-street) bikeways shall be provided along all Arterial Roads.
- **Policy 2.B.3.** Class II bikeways which provide for restricted right-of-way within street sections shall be provided along Minor and Major Collector Streets.
- **Policy 2.B.4.** Class III bikeways where bikes share right-of-way with vehicles may be provided along neighborhood streets as determined appropriate to connect with other bikeways or community open space areas.

3.17.2 Environmental Impacts

This section describes the proposed project's potential impacts on transportation. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

As discussed in Chapter 2, *Project Description*, water for project construction and operation would either be supplied by the San Luis Water District (SLWD) through existing connections to the solar project site or transported to the solar project site via 4,000-gallon water trucks from the Mid-Cal well located adjacent to SR 33 at the northwest corner of AKT's Mid-Cal property, approximately 4.4 miles north of the solar project site. The method that is ultimately implemented will depend on which approvals are granted. For purposes of the transportation analysis, the Mid-Cal well option is assumed because it would represent a worst-case analysis due to the required truck trips.

Methods for Analysis

This section describes the methods and assumptions used for the construction and operational transportation analysis. Traffic impacts associated with the project are related primarily to temporary construction and routine maintenance activities. The traffic assessment focuses on short-term traffic impacts associated with changes in traffic patterns and an increase in project-related traffic in the project vicinity during construction and maintenance. Traffic impacts during construction are quantified because construction would result in large numbers of trips by trucks and construction employees' vehicles. Trips during operation and maintenance would be limited to trips involving up to eight employees per day and approximately 407 potable water truck deliveries per year.

The impact analysis qualitatively discusses the potential impacts from project operation on roadway traffic operation, alternative transportation, emergency access, and safety hazards along the primary project access routes. Vehicle trips generated during construction and operation and maintenance are estimated using the construction information (i.e., construction schedule and duration, number of truck and worker trips) and the operation and maintenance information (i.e., frequency, duration, number of truck and worker trips) described in the project description and provided by the project applicant.

Construction Assumptions

Trip generation during project construction is defined in terms of the number of construction employees, construction trucks, and water trucks on-site during a weekday, including peak commute hours. Table 3.17-3 shows total trip generation for the project, which is inclusive of the PG&E substation improvements. A total of 1,373 daily trips could be made by automobiles and trucks, with 443 trips in the morning peak hour (6:00 to 9:00 a.m.) and 398 trips in the evening peak hour (4:00 to 6:00 p.m.).

Construction Truck Traffic

The number of trucks hauling materials and equipment to and from the project site would vary over the construction period. The largest number of trucks per day is anticipated during the phase when vendors transport equipment and aggregates to the site (i.e., overlap of site preparation, underground work, solar panel system installation). At that time, a total of 363 truck trips per day are anticipated, as shown in Table 3.17-3. Water trucks would also visit the site over this same time period. An average of 75 round trips per day could occur over the life of construction; on a peak day, that total could increase to 137 round trips (Mekkelson pers. comm). Therefore, a total of 319 round trips per day during peak times or 637 one-way daily trips would result from construction truck traffic (Table 3.17-3).¹

Table 3.17-3. Project Trip Generation

			Trip Generation				
			Daily	Morning Peak Hour (6:00 to 9:00 a.m.)		Evening Peak Hour (4:00 to 6:00 p.m.)	
Type	Peak Day			In	Out	In	Out
Regular Trip Generation after Construction							
Regular Operation	Maintenance	8 employees	16	8	0	0	8
		21 water truck loads	42	2	2	2	2
Total All Vehicles			58	10	2	2	10
Construction Trip Generation							
Construction Employees	Solo Drivers	367 employees	734	367	0	0	367
	Ride Share	41 employees	0	0	0	0	0
	Subtotal	408 employees	734	367	0	0	367
Construction Trucks	Total	182 truck loads	363	23	22	1	1
Water Trucks	Total	137 truck loads	274	14	14	14	14
	Subtotal	319 truck loads	637	37	38	15	15
Total All Vehicles			1,373	405	38	15	383

Note: Numbers may not sum precisely because of rounding.

Source: KD Anderson & Associates, Inc. 2023. *Transportation Impact Analysis*. December.

Typically, shipments by truck to construction sites occur throughout the day but are normally concentrated during the beginning of the workday. This analysis assumes that shipments would be accepted primarily over an 8-hour period from 7:00 a.m. to 3:00 p.m. This assumption has been used to identify morning and evening peak-hour truck trip generation. Two assumptions have been made regarding the distribution of trucks during the 8-hour window.

- On average 12.5 percent of the construction truck loads could arrive in each hour. For this analysis, it has been conservatively assumed that 20 of the 182 inbound daily truck trips would occur during the morning peak hour (i.e., 15 percent of total) and that 19 trucks would also exit at this time.
- Conversely, although few shipments are expected to be received regularly during the evening peak hour (i.e., between 4:00 to 6:00 p.m.), it has been conservatively assumed that one inbound and one outbound truck trip would occur during this period.

¹ Numbers may not sum precisely because of rounding.

Water truck activity would also be spread across a construction day but would occur uniformly throughout the day. Assuming 10 percent of the daily water truck trips were made in the morning and evening peak hour, 14 round trips would occur during both hours on a peak day (Table 3.17-3).

Construction Employee Traffic

The number of employees working on the project site at any time would vary, with a peak employee level of 408 persons. Construction employees would generally arrive by private automobile, but informal carpooling, especially during the later stages of the project, is a reasonable expectation. For this analysis, 10 percent of the employees are expected to be carpool riders. Thus, on a daily basis, construction employee commute trips could total 734 trip ends, as shown in Table 3.17-3 (i.e., half inbound and half outbound).

The project would be expected to operate on a regular construction day, with employees arriving in the morning peak hour and departing during the evening peak hour. This analysis assumes that, under a regular schedule, all employees would arrive and depart within a single peak commute hour. Thus, peak-hour trip generation would total 367 inbound trips in the morning peak hour and 367 outbound trips in the evening peak hour (Table 3.17-3).

Construction Trip Distribution

To conduct this analysis, assumptions were made to determine the construction trip distribution of construction trucks, water trucks, and construction employee vehicles. The distribution of construction trucks would be oriented to the shipping points for equipment and materials. Components for the solar project site, which compose 90 percent of the construction truck traffic, would very likely originate at the Port of Oakland and be trucked to the solar project site via I-5. Materials such as gravel and concrete would originate at existing sources that already serve the western Merced County area from sites near Los Banos or Santa Nella. Because the selection of material sources will eventually depend on choices made by the contractor, this analysis assumes a general distribution for construction truck traffic of 90 percent north on I-5 and 10 percent east on SR 152.

For water trucks, the source of water is expected to be in Santa Nella via SR 33 north of I-5. These vehicles would use SR 33 to reach the site.

The distribution of construction employee trips would depend on the location of employee residences, either temporary or full time. Construction employees could reasonably reside up to 30 to 40 minutes from the project site, which includes the communities of Los Banos, Dos Palos, Patterson, Newman, Gustine, and Santa Nella as well as the city of Merced. Based on the population in each area and the relative driving distance to the project site, it is assumed that employee travel would be split, with 50 percent arriving from west of Billy Wright Road on SR 152 and 50 percent arriving from the east.

Operational Assumptions

The assumptions for the operational transportation analysis include the following:

- On a daily basis during project operation, up to eight persons would generate 16 daily vehicle trips (i.e., total of inbound and outbound trips).
- Water trucks would continue to visit the solar project site after construction when it is under regular operation for maintenance, resulting in an estimated 407 round trips annually spread over a 20-work day period, equating to an average of roughly 21 daily round trips.

- The proposed improvements to the PG&E substation would be minor in nature and would not result in additional operational trips being made at that facility, as compared to existing conditions.

Vehicle Miles Traveled

As described under *Regulatory Setting*, SB 743 requires OPR to identify new metrics for identifying and mitigating transportation impacts within CEQA. For land use projects, OPR identified VMT per capita, VMT per employee, and net VMT as new metrics for transportation analysis. The CEQA Guidelines state that lead agencies, such as the County, may establish “thresholds of significance” to assist with the determination of significant impacts of a project. The CEQA Guidelines generally state that projects that decrease VMT can be assumed to have a less-than-significant transportation impact. The CEQA Guidelines do not provide any specific criteria on how to determine what level of project VMT would be considered a significant impact. However, the OPR technical advisory provides general direction regarding the methods to be employed and significance criteria to evaluate VMT impacts, absent policies adopted by local agencies. OPR guidance does not extend to temporary short-term travel associated with construction projects and states that CEQA VMT analysis is intended to focus on passenger vehicles. Screening criteria can be used to quickly identify whether adequate evidence exists to presume a project would have a less-than-significant VMT impact without conducting a detailed study. However, each project should be evaluated against the evidence supporting that screening criteria to determine if it applies. Under OPR and MCAG guidance, projects meeting at least one of the criteria below can be presumed to have a less-than-significant VMT impact, absent substantial evidence that the project would lead to a significant impact.

- **Small Projects:** Defined by OPR as a project that generates 110 or fewer average daily vehicle trips and by MCAG’s proposed VMT guidelines as a project that is consistent with the General Plan generating 1,000 or fewer daily trips or a project requiring a General Plan amendment generating 500 or fewer daily trips.
- **Affordable Housing:** Defined as a project consisting of deed-restricted affordable housing.
- **Local-Serving Retail:** Defined as retail uses of 50,000 square feet or less; presumed to have a less-than-significant impact.
- **Projects in Low VMT-Generating Area:** Defined as a residential or office project that is in a VMT-efficient area, based on an available VMT estimation tool. The project must be consistent in size and land use type (i.e., density, mix of uses, transit accessibility, etc.) with the surrounding built environment.
- **Proximity to High-Quality Transit.** The directive notes that employment and residential development within 0.5 mile of a high-quality transit corridor offering 15-minute headways can be presumed to have a less-than-significant impact.

This screening evaluation is presented under Impact TRA-2, below.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

Would the project:

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?
- Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access?

Impacts and Mitigation Measures

Impact TRA-1: Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts on transportation and circulation that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.14-1 through 5.14-11 on pages 5.14-35–5.14-94 of the Community Plan EIR, which is incorporated by reference. Specifically, Impact 5.14-7 from the Community Plan EIR found that because implementation plans would be required to provide pedestrian and bicycle circulation facilities, as described in the Community Plan, to the standards provided in the County’s Municipal Code, impacts related to this topic would be less than significant. Impact 5.14-8 from the Community Plan EIR found that significant impacts on alternative and public transportation facilities would result because transit facilities or transportation management strategies have not been developed to serve the project area. Policies identified in the Community Plan do not guarantee that services will be provided to the project site. However, Community Plan Mitigation Measure 5.14-8, Demand for Alternative and Public Transportation, would be implemented, and the Community Plan EIR concluded that it would adequately meet the needs of residents in the project area, reducing the impact to less than significant.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change for the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; installation of communication equipment, electrical distribution/transmission infrastructure, and substation equipment; development of public utility facilities; and construction of ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The Community Plan includes a circulation plan and policies that allow for the development of roadways, public transit facilities (e.g., bus stops), and bicycle and pedestrian facilities to serve community plan buildout. However, because the solar project may place project infrastructure within areas the General Plan or Community Plan currently identified for transportation facilities, it

could conflict with the Community Plan absent an amendment. The proposed on-site General Plan and Community Plan amendments, and the establishment of the solar overlay, would bring these plans and policies into conformity with the solar project.

The solar project would also require an off-site amendment to the General Plan and Community Plan to redesignate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct construction of housing or generation of a new population. It would allow the County to maintain high-density/medium-density housing development capacity. Although the proposed off-site residential redesignation would increase the planned density within the residential redesignation area, it would not change the overall high-density/medium-density residential capacity of the approved community plan. Instead, it would redistribute already-approved high-density/medium-density residential capacity to a different area within the community plan area. Future development within the off-site residential redesignation area would be subject to the policies in the community plan and the mitigation measures in the Community Plan EIR.

The following sections describe the proposed off-site residential redesignation's consistency with roadway, public transit, and bicycle and pedestrian policies from a program, plan, ordinance, or policy addressing the circulation system.

Roadways

Under the off-site residential redesignation, the roads proposed within the solar project site would not be constructed during the life of the solar project, but if there is no development in this area, roads are not required. New roads could still be constructed within the off-site residential redesignation area, consistent with the Community Plan as amended by the proposed project. Thus, access to areas that could still be developed would not be impeded.

Redistributing housing to the off-site residential redesignation area would not add more trips to the overall Community Plan area or to local or regional roadways because the overall amount of high-density/medium-density residential capacity would not change. The proposed off-site residential redesignation area could be served by the same roadways as under the Community Plan, with modifications reflected in the off-site residential redesignation to account for the proposed project's impacts on previously designated transportation facilities. Further, the primary roadway serving the off-site residential redesignation area, Billy Wright Road, would not be affected by the proposed project because no improvements are proposed. Therefore, the off-site residential redesignation would not conflict with Objective 1.A, Policy 1.A.1; Objective 1.B, Policy 1.B.1; or Policy 1.B.6, Objective 1.C. Conflicts with these policies would not occur because the projected traffic demands would be met with the circulation system (Objective 1.A), the roadway infrastructure would provide for the efficient movement of vehicular traffic (Policy 1.A.1), and the regional circulation needs would be satisfied through adequate state highway interchanges and freeways (Objective 1.C). In addition, the road network within the off-site residential redesignation area would effectively accommodate internal and external vehicle trips (Objective 1.B) and adequately service project and cumulative traffic volumes (Policy 1.B.1), which would not hinder emergency access to the off-site residential redesignation area (Policy 1.B.6). Conflicts with these objectives and policies would be avoided because future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR, which requires adequate roadway infrastructure and regional circulation to support the

planned development. Therefore, the proposed off-site residential redesignation area would not cause a conflict with a program, plan, ordinance, or policy addressing the roadway system and impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Public Transit

The redistribution of housing units to the off-site residential redesignation area would not conflict with adopted plans or policies addressing public transit given modifications reflected in the off-site residential redesignation to account for the proposed project's impacts on previously designated transportation facilities. Public transportation would continue to be easily accessible (Objective 2.A), perhaps even more accessible given the higher density housing in the area and smaller area in which to walk to arrive at a station. Bus shelters and stops, a mass transit station, and a park-and-ride lot (Policies 2.A.1, 2.A.2, 2.A.3) would still be planned for areas within the off-site residential redesignation area. In addition, future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR, such as Mitigation Measure 5.14-8, Demand for Alternative and Public Transportation. Therefore, the off-site General Plan amendment would not cause a conflict with a program, plan, ordinance, or policy addressing public transit and impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Bicycle and Pedestrian Facilities

The redistribution of housing units to the off-site residential redesignation area would not conflict with adopted plans or policies addressing bicycle and pedestrian facilities with modifications reflected in the off-site residential redesignation to account for the proposed project's impacts on previously designated transportation facilities. Bicycle and pedestrian routes would still be constructed throughout the off-site residential redesignation area (Objective 2.B, Policy 2.B.1), including Class I, II, and III bikeways along neighborhood streets, as appropriate (Policies 2.B.2, 2.B.3, 2.B.4). In addition, future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. Therefore, the off-site General Plan amendment would not cause a conflict with a program, plan, ordinance, or policy addressing bicycle and pedestrian facilities and impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

Roadways

Construction of the solar project would add an estimated 1,373 daily trips to area roadways, primarily on SR 152 and I-5. However, these trips would represent a small fraction of the capacity of area roadways, particularly SR 152 and I-5. In addition, these trips would be temporary in nature and would be dispersed throughout the day. With planned improvements and the implementation of the Construction Traffic Control Plan (CTCP), which is described in Section 2.3.4 of Chapter 2, *Project Description*, and implements Community Plan Mitigation Measure 5.14-9, the addition of solar project traffic would result in moderate delays on the northbound approach to SR 152 at the

Billy Wright Road intersection during peak periods, but projected conditions would satisfy the County minimum LOS D standard. In addition, all area roadways and intersections studied would continue to operate at an acceptable LOS during solar project construction. Thus, solar project construction traffic is not expected to substantially degrade LOS or conflict with roadway standards. (KD Anderson & Associates, Inc. 2023). There would be no conflict with adopted policies, plans, or programs for roadways, and the solar project would not decrease the performance or safety of roadways. The solar project construction impact would be less than significant, consistent with the Community Plan EIR conclusion. Community Plan Mitigation Measure 5.14-8 applies to tentative maps and would not apply to the solar project. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Public Transit

The solar project area has limited public transit service. As described under *Environmental Setting*, The Micro Bus provides demand-responsive transit within a service area that extends beyond Los Banos to Gustine and Santa Nella and includes the area of the solar project. Construction of the solar project would add an estimated 1,373 daily trips to area roadways, primarily on SR 152 and I-5. However, these trips would represent a small fraction of the capacity of area roadways, particularly SR 152 and I-5. In addition, these trips would be temporary in nature and would be dispersed throughout the day. Thus, solar project construction traffic is not expected to interfere with public transit services in the project area. There would be no conflict with adopted policies, plans, or programs supporting public transit, and the solar project would not decrease the performance or safety of public transit related to construction, and impacts would be less than significant, consistent with the Community Plan EIR conclusion. Community Plan Mitigation Measure 5.14-8 applies to tentative maps and would not apply to the solar project. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Bicycle and Pedestrian Facilities

There are currently no dedicated bicycle or pedestrian facilities in the immediate area of the solar project site, but the Merced County Regional Bicycle Transportation Plan indicates that Class II bicycle lanes could be developed in the future on SR 33 from McCabe Road in Santa Nella south to the SR 152/SR 33 interchange. Because there are no existing facilities, construction activities at the solar project site could not interfere with bicycle or pedestrian facilities. Community Plan Mitigation Measure 5.14-8 applies to tentative maps and would not apply to the solar project.

The circulation plan for the Villages of Laguna San Luis Community Plan identifies multi use trails and bicycle lanes on future roads that would traverse the plan area upon completion. These facilities would overlap with the solar project site and adjoining parcels; thus, the solar project would conflict with the existing circulation plan because it would preclude development of identified trails, bicycle lanes, and future roads during the solar project's life. However, the solar project includes amendments to the Villages of Laguna San Luis Community Plan; with these amendments, the solar project would not conflict with the circulation plan. In addition, the solar project would not substantively affect bicycle and pedestrian facilities because the currently planned facilities on the solar project site are intended to serve currently planned residential uses on the site that would not occur during implementation of the solar project. Because commercial and residential development at the solar project site would not occur over the life of the solar project, the solar project would not

interfere with implementation of any plan facilities within the solar project site. If future development under the Villages of Laguna San Luis Community Plan were to occur in the areas surrounding the solar project site, that development would be required to prepare an implementation plan pursuant to County requirements. The implementation plan would identify specific bicycle and pedestrian facilities to serve the project. Therefore, there would be no conflict with adopted policies, plans, or programs supporting bicycle or pedestrian facilities, and the solar project construction would not decrease the performance or safety of bicycle or pedestrian facilities; impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

Operation of the solar project would add a total of 58 daily trips to area roadways. Given the minor number of additional trips, operation of the solar project would not substantially degrade LOS or conflict with roadway standards, would not interfere with public transit services, and would not interfere with bicycle or pedestrian facilities. (KD Anderson & Associates, Inc. 2023). Therefore, there would be no conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities as a result of solar project operation and impacts would be less than significant, consistent with the Community Plan EIR conclusion. Community Plan Mitigation Measure 5.14-8 applies to tentative maps and would not apply to the solar project. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning of the solar project would add a small number of daily trips in 2060, less than the number of daily trips expected during solar project construction. However, these trips would represent a small fraction of the capacity of area roadways, particularly SR 152 and I-5. (KD Anderson & Associates, Inc. 2023). In addition, these trips would be temporary in nature and would be dispersed throughout the day. The decommissioning and site reclamation plan would also outline specific traffic control measures to implement during the decommissioning phase. The measures would very likely be similar to the measures in the CTCP (which is described in Section 2.3.4 of Chapter 2, *Project Description*, and implements Community Plan Mitigation Measure 5.14-9) but would consider any changes to the local or regional transportation system that would occur between project approval and 2060. Thus, decommissioning traffic is not expected to substantially degrade LOS or conflict with roadway standards. It is possible that the planned Class II bicycle lanes on SR 33 from McCabe Road in Santa Nella south to the SR 152/SR 33 interchange could be operational by the time decommissioning occurs. However, because the number of additional trips would be minor and the additional trips would be temporary, decommissioning the solar project site would not interfere with bicycle or pedestrian facilities. Therefore, there would be no conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities as a result of solar project decommissioning and impacts would be less than significant, consistent with the Community Plan EIR conclusion. Community Plan Mitigation Measure 5.14-8 applies to tentative maps and would not apply to the solar project. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Impacts related to conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities associated with the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above. In addition, because this portion of the solar project is located outside the Community Plan, there are no bicycle facilities, multi-use trails, or similar features at or planned for this area.

Off-Site Mitigation Site

Construction and operational maintenance activities at the off-site mitigation site would require very minimal personnel and vehicles. As such, additional truck and vehicular traffic would be too little to appreciably lengthen current queues at on- and off-ramps or degrade LOS on area roadways. Thus, there would be no conflicts with adopted policies, plans, or programs supporting roadway, public transit, bicycle, or pedestrian facilities, and the off-site mitigation site would not decrease the performance of roadway, public transit, bicycle, or pedestrian facilities. Therefore, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Construction activity at the PG&E substation would add a small number of trips (up to 25 daily trips) along Jasper Sears Road and at its intersection with SR 152. This additional truck traffic, which would be in addition to the trips generated by construction of the solar project, would be too little to appreciably lengthen current queueing at the off-ramps or degrade LOS on area roadways. (KD Anderson & Associates, Inc. 2023). In addition, the proposed improvements to the PG&E substation would be minor in nature and would not result in additional trips being made at this facility during operations. Thus, there would be no conflicts with adopted policies, plans, or programs supporting roadway, public transit, bicycle, or pedestrian facilities, and the PG&E substation improvements would not decrease the performance of roadway, public transit, bicycle, or pedestrian facilities. Therefore, impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, when considering the whole of the proposed project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site components, impacts for the entire proposed project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact TRA-2: Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts on transportation and circulation that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.14-1 through 5.14-11 on pages 5.14-35–5.14-94 of the Community Plan EIR, which is incorporated by reference. SB 743 had not been passed at the time the Community Plan EIR was adopted; thus, VMT impacts were not explicitly evaluated. However, the connection between VMT and GHG emissions was widely known at the time the Community Plan EIR was prepared (Kahn Ribeiro et al. 2007). The Community Plan EIR discussed VMT and noted that the project would increase VMT and mobile source emissions (Community Plan EIR, page 5.12-24). The Community Plan EIR also included Mitigation Measure 5.12-2b, which requires future development within the Community Plan area to include VMT infrastructure, such as park-and-ride lots and/or satellite telecommuting centers.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change for the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; installation of communication equipment, electrical distribution/transmission infrastructure, and substation equipment; development of public utility facilities; and construction of ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and community Plan to redesignate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct construction of housing or generation of new population. It would allow the County to maintain high-density/medium-density housing development capacity. Although the proposed off-site residential redesignation would increase planned density within the residential redesignation area, it would not change the overall high-density/medium-density residential capacity of the approved Community Plan. Instead, it would redistribute already-approved high-density/medium-density residential capacity to a different area within the Community Plan area. Because the overall high-density/medium-density residential capacity would not change, there would be no increase in potential impacts on transportation and circulation compared with the project the County approved in the Community Plan EIR. Although there could be a nominal change in the distribution of trips due to the redistribution of housing units, vehicles would still have similar routes to major freeways in the area. Thus, VMT would not be greater. Future development within the off-site residential redesignation area would also be subject to the policies in the Community Plan related to reducing VMT and Mitigation Measure 5.12-2b. Therefore, impacts from the off-site residential redesignation

would be less than significant, consistent with the Community Plan EIR discussion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction and Decommissioning

OPR guidance does not extend to temporary short-term travel associated with construction projects and states that CEQA VMT analysis is intended to focus on passenger vehicles. CEQA Guidelines Section 15064.3, subdivision (a), states, “[f]or the purposes of this section, ‘vehicle miles traveled’ refers to the amount and distance of automobile travel attributable to a project.” According to OPR’s technical advisory, the term “automobile” refers to on-road passenger vehicles, specifically cars and light trucks. Therefore, because the construction- and decommissioning-related activities associated with the solar project would be temporary and would cease once the project is constructed, this analysis considers only the VMT effects of the solar project’s regular operation, per OPR guidance.

Operation

OPR’s and MCAG’s screening criteria, described above under *Methods for Analysis*, the *Vehicle Miles Traveled* subheading, are used to determine the solar project’s VMT impacts. The OPR and MCAG “Small Project” criteria are applicable to the solar project. Regular operation of the solar project would require eight employees, which is projected to result in 16 daily automobile trips as well as 42 water truck trips. Because the “110 average daily vehicle trips” threshold for automobiles is not exceeded, per OPR guidance, and the “1,000 or fewer daily trips for a project consistent with a general plan or a project requiring a general plan amendment generating 500 or fewer daily trips” threshold, per the proposed MCAG guidance, is not exceeded, the solar project’s VMT impacts can be presumed to be less than significant; as a result, the solar project’s VMT impacts would not result in substantially more severe significant impacts compared to those identified in the Community Plan EIR. Community Plan Mitigation Measure 5.12-2b applies to tentative maps and would not apply to the solar project.

The solar project cannot be addressed by the other screening criteria identified by OPR. The solar project is not an “Affordable Housing” development or “Locally Serving Retail.” The County has not established “Low VMT-Generating Areas,” nor is “High-Quality Transit” available in this area of Merced County. Therefore, impacts from solar project operation are less than significant, consistent with the Community Plan EIR discussion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

VMT impacts associated with the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

The OPR “Small Project” criteria are applicable to the off-site mitigation site. Regular operation of the off-site mitigation site would require no daily employees; only periodic, as-needed maintenance of existing roadways and fencing as well as invasive plant management activities would be required.

Because the “110 average daily vehicle trips” threshold for automobiles would not be exceeded, the off-site mitigation site’s VMT impacts can be presumed to be less than significant. Community Plan Mitigation Measure 5.12-2b applies to tentative maps and would not apply to the off-site mitigation site. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR analysis. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The proposed improvements to the PG&E substation would be minor in nature and would not result in additional trips potential impacts on transportation and circulation being made at this facility compared with existing conditions. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR analysis. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

As explained above, the off-site redesignation would not increase potential impacts on transportation and circulation, or VMT, beyond the project analyzed in the Community Plan EIR. The PG&E substation improvements would not result in additional trips or potential impacts on transportation and circulation compared with existing conditions. Although the solar project and off-site mitigation site would require additional automobile trips, even combined these trips fall well below OPR’s screening criteria. As a result, when considering the whole of the proposed project, impacts of the entire proposed project would be less than significant, consistent with the Community Plan EIR analysis. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact TRA-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (With implementation of Community Plan EIR mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts on transportation and circulation that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.14-1 through 5.14-11 on pages 5.14-35–5.14-94 and Appendix A, page 7, of the Community Plan EIR, which is incorporated by reference. Specifically, Impact 5.14-9 found that the project’s construction trips could substantially increase local roadway volumes and interfere with the safe and efficient operation of these roadways. However, Community Plan Mitigation Measure 5.14-9, which requires the preparation of Traffic Management Plans for construction, would be implemented. The Community Plan EIR found that impacts relating to hazards from geometric design features or incompatible uses would be less than significant with mitigation.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change for the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; installation of communication equipment, electrical distribution/transmission infrastructure, and substation equipment; development of public utility facilities; and construction of ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to redesignate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct construction of housing or generation of a new population. It would allow the County to maintain high-density/medium-density housing development capacity. Although the proposed off-site residential redesignation would increase planned density within the residential redesignation area, it would not change the overall high-density/medium-density residential capacity of the approved Community Plan. Instead, it would redistribute already-approved high-density/medium-density residential capacity to a different area within the Community Plan area. Although the roads proposed within the solar project site would not be constructed, new roads could still be constructed within the off-site residential redesignation area, consistent with the Community Plan as amended. Thus, access to the areas that could still be developed would not be impeded.

Redistributing housing to the off-site residential redesignation area would not add new or different uses, such as farm equipment, or add more trips to the overall Community Plan area or to local or regional roadways, which have not materially changed since certification of the Community Plan EIR, because the overall amount of high-density/medium-density residential capacity would not change and no development has occurred since certification of the Community Plan EIR. As shown in Figures 3.10-2 and 3.10-3 in Section 3.10, *Hydrology and Water Quality*, land in and around the project site was largely undeveloped, or in agriculture, when the Community Plan EIR was prepared, and remains so today. The proposed off-site residential redesignation area would be served by the same roadways as under the Community Plan with modifications reflected in the off-site residential redesignation to account for the proposed project's impacts on previously identified transportation facilities. Thus, additional conflicts between vehicles traveling to and from the off-site residential redesignation area and trucks traveling to and from the Billy Wright landfill would be unlikely to occur, thereby avoiding safety issues. In addition, future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR, ensuring that hazardous geometric design features are avoided. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

Roadways in the project vicinity are generally straight and have good sight distance; thus, visibility and access are acceptable. With regards to safety on the state highway, the primary issue is the creation of queues of westbound traffic behind vehicles waiting to turn left across eastbound traffic at the Billy Wright Road intersection, along with queuing by eastbound traffic arriving at that intersection. These safety issues would be minimized through implementation of the CTCP, which would be implemented as part of the project as described in detail in the Project Description, Section 2.3.4. The CTCP, which implements Community Plan Mitigation Measure 5.14-9, includes the following key elements (Figure 3.17-2 shows the detour routes outlined below):

1. All construction-related automobile traffic using eastbound SR 152 would be directed to turn right onto Billy Wright Road to reach the solar project site.
2. All construction automobile traffic to the solar project site using westbound SR 152 would be directed to continue past the Billy Wright Road intersection to the SR 152/I-5 interchange. At that point, the detour would direct vehicles to leave the expressway and use the loop ramps to turn onto eastbound SR 152 and continue to a right turn onto Billy Wright Road.
3. All exiting automobile traffic from the solar project site would be directed to turn left onto northbound Billy Wright Road. All exiting automobile traffic from northbound Billy Wright Road would be required to turn right onto eastbound SR 152. No left turns would be permitted for construction traffic at this location. Automobiles bound for westbound SR 152 would turn right onto eastbound SR 152. The detour would direct automobiles to then make a U-turn at the SR 152/Volta Road intersection and continue westerly from that point.
4. Regular construction trucks, including water trucks, would access the site via San Luis Drive and use the SR 152/SR 33 interchange for access. A detour is not required for these vehicles. Vehicles would proceed along San Luis Drive and the dirt road at its southern terminus, accessing the solar project site from a temporary access point along the western boundary of the solar project site.
5. Oversized trucks would access the site via the SR 152/Billy Wright Road intersection in the same manner described above for construction automobiles. Exiting oversized trucks would be directed to turn left on to Billy Wright Road and travel northbound to the SR 152/Billy Wright Road intersection. Oversized trucks destined for I-5 or for SR 152 west of I-5 would be directed to continue on eastbound SR 152 into Los Banos to the signalized SR 152/SR 165 (Mercey Springs Road) intersection. At that point, oversized trucks are to turn right and continue south on SR 165 to its interchange on I-5 where a right turn would send trucks back to the I-5/SR 152 interchange.
6. The shoulder along eastbound SR 152 would temporarily be restriped as an acceleration lane east of Billy Wright Road, as was the case during construction of the Wright solar project. Current striping shall be restored after Las Camas solar construction is completed.

Because the CTCP prohibits project traffic from making westbound left turns onto SR 152 at the SR 152/Billy Wright Road intersection, the volume of traffic turning left would not increase. Queues caused by vehicles headed to the landfill would remain within the immediate area of the median opening, and no safety impact would occur. Automobiles would instead be directed easterly to make U-turns at the SR 152/Volta Road intersection, and construction trucks and water trucks would instead use San Luis Road to the SR 152/SR 33 interchange.

The CTCP would also provide acceleration and deceleration lanes on SR 152. Because a long eastbound right-turn deceleration lane would be available, eastbound traffic turning onto Billy Wright Road would be able to decelerate outside of the flow of through traffic, and a queue would not affect eastbound traffic, minimizing safety impacts. A northbound queue can be expected on Billy Wright Road during peak evening commute times, but it would not affect mainline traffic on SR 152. Therefore, by providing acceleration and deceleration lanes on SR 152, trucks and construction employee vehicles would be able to access the state highway without interfering with the flow of through traffic, minimizing safety impacts.

The project would also add a small amount of truck traffic to the SR 152/SR 33 interchange during peak hours. However, the traffic volume increase would be too small to lengthen the exiting off-ramp queues, and a safety issue is not expected.

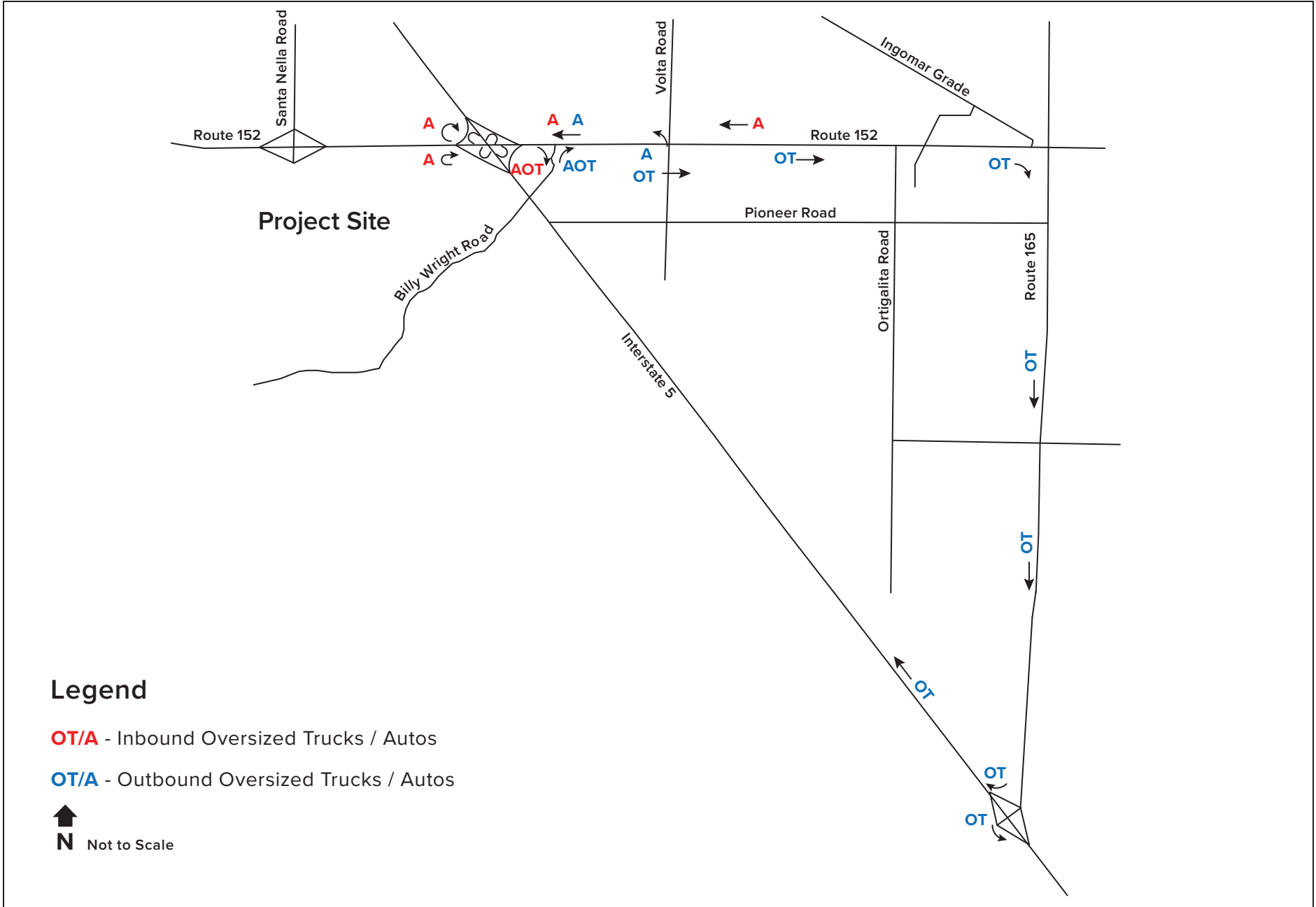
Implementation of the CTCP would detour oversized trucks on I-5 with northbound destinations to SR 152 through Los Banos to SR 165. Although school and commercial areas are in Los Banos along the detour route, these state highways currently carry appreciable truck volumes, and the intersections along the highway have been configured to accommodate the turning requirements of large trucks (i.e., STAA designations). Thus, the safety impact of additional truck traffic caused by the CTCP would not be substantial, and no additional improvements would be required.

The CTCP would also affect automobile traffic. The CTCP would direct automobiles to head west and turn right onto eastbound SR 152. Project automobile traffic would then make a U-turn at the SR 152/Volta Road intersection. The eastbound left-turn lane at this location is 850 feet long and provides the space needed for deceleration outside of the flow of through traffic. No additional improvements would be required.

Lastly, two seasonal factors affect safety in this area of Merced County. Fog can occur in the winter and reduce visibility for motorists on state highways and Merced County roads. Second, in the late summer, the tomato harvest results in large numbers of agricultural trucks using Volta Road to reach packing plants off Ingomar Grade in and near the community of Volta. It is reasonable to expect that project construction traffic would occasionally occur during periods of fog. In addition, construction would most likely occur during the harvest season. However, with implementation of the CTCP, which is described in Section 2.3.4 of Chapter 2, *Project Description*, and implements Community Plan Mitigation Measure 5.14-9, potential traffic conflicts on SR 152 would be addressed. Impacts from construction of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.*** Although not required to address a specific project safety impact, if requested by Caltrans, the project proponents could include applicable signage related to seasonal issues in the CTCP.

Operation

Operation of the solar project site would not substantially increase hazards due to a geometric design feature or incompatible use because the daily trips generated by the project would be very minor in comparison to the average daily traffic of the roadways near the solar project site, avoiding additional safety hazards. Thus, safety hazards during project operation would not occur, and impacts from operation of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***



Legend

OT/A - Inbound Oversized Trucks / Autos

OT/A - Outbound Oversized Trucks / Autos

N Not to Scale

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Figure 3.17-2
Construction Traffic Control Plan Detour Routes

Decommissioning

Decommissioning of the solar project is expected to contribute a small number of daily trips in 2060, less than the number of daily trips expected during solar project construction. The decommissioning and site reclamation plan would outline specific traffic control measures to implement during the decommissioning phase. The measures would very likely be similar to the measures in the CTCP but would consider any changes to the local or regional transportation system that would occur between project approval and 2060. Thus, with implementation of measures similar to the measures in the CTCP, safety hazards would not occur during decommissioning. Therefore, impacts from decommissioning of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Design hazards and incompatible uses associated with the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

Construction and operational maintenance activities at the off-site mitigation site would require very minimal personnel and vehicles. As such, additional truck and vehicular traffic would be too little to appreciably lengthen current queueing at the off-ramps, and a safety issue due to queueing that extends to the freeway mainline is not expected. Therefore, impacts of off-site mitigation site components would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Construction activity at the PG&E substation would also add a small number of trips (up to 25 daily trips) along Jasper Sears Road and at its intersection with SR 152. This additional truck traffic would be too little to appreciably lengthen current queueing at the off-ramps, and a safety issue due to queueing that extends to the freeway mainline is not expected. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, when considering the whole of the proposed project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site components, would be less than significant with implementation of Community Plan mitigation, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact TRA-4: Result in inadequate emergency access? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts on emergency vehicle access that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.14-12 on pages 5.14-94 and 5.14-95 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that the construction of proposed off-site improvements could partially obstruct roadways in the project vicinity, which could block or slow emergency response vehicles traveling to the site and could adversely affect the response times of emergency response agencies, depending on the time of day (i.e., peak hours). This would be a potentially significant impact. However, with implementation of Mitigation Measure 5.14-12, Impacts to Emergency Vehicle Access, and policies of the Community Plan (Circulation, Objective 1.B, Policy 1.B.6), adequate emergency access would be provided, and the Community Plan EIR concluded that the impact would be less than significant.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change for the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; installation of communication equipment, electrical distribution/transmission infrastructure, and substation equipment; development of public utility facilities; and construction of ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to redesignate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct construction of housing or generation of a new population. It would allow the County to maintain high-density/medium-density housing development capacity. Although the proposed off-site residential redesignation would increase planned density within the residential redesignation area, it would not change the overall high-density/medium-density residential capacity of the approved Community plan. Instead, it would redistribute already-approved high-density/medium-density residential capacity to a different area within the Community plan area. Although the roads proposed within the solar project site would not be constructed, new roads could still be constructed within the off-site residential redesignation area, consistent with the Community Plan as it is proposed to be amended. Thus, emergency access to the areas that could still be developed would not be impeded.

Redistributing housing to the off-site residential redesignation area would not add more trips to the overall Community Plan area or local or regional roadways because the overall amount of high-density/medium-density residential capacity would not change. The proposed off-site residential redesignation area would be served by the same roadways as under the Community

Plan, with modifications as identified in the off-site residential redesignation to preserve adequate emergency access. In addition, future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR, such as Mitigation Measure 5.14-12, Impacts to Emergency Vehicle Access; Objective 1.B; and Policy 1.B.6. Moreover, conditions have not changed since certification of the Community Plan EIR in a manner that would change its conclusions, since no development has occurred since certification of the EIR, and there has not been material development or changes to emergency access to the off-site residential redesignation area. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

During construction of the solar project, there would be two points of access, either via Billy Wight Road to SR 152 or via San Luis Drive or the SR 152/SR 33 interchange. As a result, if one access point is unavailable during an emergency, the other access point to an alternative highway would remain available. Thus, construction access that may not be used with regular operation would remain available in an emergency. In addition, as discussed under Impact TRA-3, the solar project would include implementation of a CTCP to direct construction-related automobiles and trucks to the safest routes. This would reduce the potential for vehicular conflicts and long off-ramp or on-ramp queues. The detour routes for trucks and automobiles would also prevent left turns across the state highway and avoid the need for lane closures on public roads. All of these measures would help maintain adequate emergency access near the solar project site during construction by avoiding traffic backups. Thus, there would be adequate emergency access during project construction. Therefore, impacts from construction of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

Operation of the solar project site would not affect emergency access because the daily trips generated by the project would be very minor in comparison to the average daily traffic of the roadways near the solar project site, thereby avoiding additional conflicts on area roadways. The solar project would be located in a rural area with multiple access roads, allowing adequate egress/ingress to the solar project site in the event of an emergency. The solar project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The solar project would also not involve physical components that would interfere with the ability of the County, as well as emergency response service providers, to implement emergency response activities within the project site or vicinity. Community Plan Mitigation Measure 5.14-12 applies to final maps for projects with internal roadways, and would not apply to the solar project. Thus, there would be adequate emergency access during project operation. Therefore, impacts from operation of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning of the solar project site would require workers utilizing trucks to remove solar facilities and return the site to similar pre-construction conditions. The project would implement specific traffic control measures during the decommissioning phase, expected in 2060, as part of the encroachment permit process with Caltrans. It is expected that the measures would be similar to the measures in the construction CTCP but would consider any changes to the local or regional transportation system that would occur between project approval and 2060. Thus, there would be adequate emergency access during decommissioning. Therefore, impacts from decommissioning of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Emergency access impacts associated with the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

The off-site mitigation site would be located in a rural area, with access roads allowing adequate egress/ingress to the site in the event of an emergency. Construction and operational maintenance activities at the off-site mitigation site would also require very minimal personnel and vehicles, which would avoid conflicts with emergency vehicles. Community Plan Mitigation Measure 5.14-12 applies to final maps for projects with internal roadways, and would not apply to the off-site mitigation site. Thus, there would be adequate emergency access during project construction and operation at the mitigation site. Therefore, impacts of the off-site mitigation site components would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

As discussed under Impact TRA-3, construction activity at the PG&E substation would also add a small number of trips (up to 25 daily trips) along Jasper Sears Road and at its intersection with SR 152. This additional truck traffic would be too little to appreciably lengthen current queueing at the off-ramps, thereby minimizing impacts on emergency vehicle access. In addition, as discussed above for the solar project site, the CTCP would be implemented and would minimize impacts on emergency vehicle access. During operations, no additional trips or traffic would travel to the PG&E substation area, avoiding conflicts with emergency vehicles. Thus, there would be adequate emergency access during project construction and operation. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, when considering the whole of the proposed project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site components, impacts of the proposed project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

3.17.3 References Cited

Printed References

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KD Anderson & Associates, Inc. 2023. *Transportation Impact Analysis*. April.

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Mekkelson, Heidi. ICF. 2022. Data request for Las Camas technical studies and EIR. EDPR Responses V.3 memo from Heidi Mekkelson, ICF, to Patrick Cousineau, Matthew Kauffman, and Hannah Salmon, EDP Renewables, dated July 24, 2022.

3.18 Tribal Cultural Resources

This section identifies and evaluates the project's potential impacts on tribal cultural resources. This section also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments (off-site residential redesignation); and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site residential redesignation are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Relevant technical documentation used in this analysis includes:

- *Cultural Resources Inventory Report for the Las Camas Solar Project*, Merced County, California (ICF 2022) (Appendix 3.5-1)

A letter from the Native American Heritage Commission (NAHC) was received in response to the Notice of Preparation (NOP) (Appendix 1-2). The letter describes statutory requirements for tribal outreach and does not include specific questions or concerns about the proposed project. No other comments related to tribal cultural resources were received in response to the NOP.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.18.1 Existing Conditions

Environmental Setting

Regional Setting

The project site is approximately two miles south of the Community of Santa Nella and five miles west of the city of Los Banos in western Merced County, California. The project site is on the San Luis Dam and Volta U.S. Geological Survey (USGS) 7.5-minute quadrangles.

Solar Project Site

The approximately 1,740-acre solar project site is bordered by State Route (SR) 33 to the north, Interstate 5 to the east, and privately owned farmland and the Billy Wright Landfill to the south and west. Billy Wright Road intersects the southeastern most portion of the solar project site.

The solar project site has a history of disturbance, predominantly from dry farming and grazing. The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming nonnative annual grassland. Portions of the solar project site are currently used for grazing and dry farming. Similar to the solar project site, the surrounding lands to the west and southwest are also grazed nonnative annual grassland.

PG&E Substation Improvements

The approximately 47-acre PG&E substation site contains an approximately 10-acre improvement area which is part of the project and is analyzed below. The environmental character and history of the PG&E substation improvement area are similar to those of the solar project site, described above. Specifically, historic maps and aerial imagery indicate that the area was used for agricultural purposes prior to construction of the substation.

Off-Site Mitigation Site

The off-site mitigation site is situated close to the eastern and southern edges of Los Banos Reservoir. Similar to the solar project site, elevations range from 100 feet above sea level at the lowest point to 500 feet at the highest point. The environmental character and history of the off-site mitigation site are substantially similar to those of the solar project site, described above. The site is dominated by grazed nonnative annual grassland and zoned for agricultural use.

Off-Site Residential Redesignation Area

The off-site residential redesignation area abuts the southeast portion of the solar project site. The environmental setting at the off-site residential redesignation area is described on page 3-1 in Chapter 3 of the Community Plan EIR and is incorporated by reference. As described in that discussion, the off-site residential redesignation area is primarily used for active and fallowed agricultural production (e.g., alfalfa, hay, oats, vineyards, orchards) and grazing land for cattle and sheep. This discussion accurately describes the current existing setting at the residential redesignation area.

Ethnographic Setting

The project area is in the ancestral territory of the Northern Valley Yokuts. The Northern Valley Yokuts' territory is bound by the crest of the Diablo Range to the west and the Sierra Nevada foothills to the east. The southern boundary is approximately where the San Joaquin River bends northward, and the northern boundary is roughly halfway between the Calaveras and Mokelumne Rivers. The Yokuts may have been fairly recent arrivals in the San Joaquin Valley, perhaps being pushed out of the foothills about 500 years ago (Wallace 1978:462-470).

Population estimates for the Northern Valley Yokuts vary from 11,000 to more than 31,000. Populations were concentrated along waterways and on the more hospitable east side of the San Joaquin River. Clusters of villages made up tribelets that were governed by headmen. The number of tribelets is estimated to have been 30 to 40. Each tribe spoke its own dialect of the Yokuts language. (Shipley 1978:83-84).

Principal settlements were located atop low mounds, on or near the banks of larger watercourses. Settlements were composed of single-family dwellings, sweathouses, and ceremonial assembly chambers. Dwellings were small, lightly constructed, semisubterranean, and oval. The public structures were large and earth-covered. Sedentism was fostered by the abundance of riverine resources in the area (Wallace 1978:462-470).

Subsistence among the Northern Valley Yokuts revolved around the waterways and marshes of the lower San Joaquin Valley. Fishing with dragnets, harpoons, and hook and line yielded salmon, white sturgeon, river perch, and other species of edible fish. Waterfowl and small game that were attracted to the riverine environment also provided sources of protein. The contribution of big game to the diet was probably minimal. Vegetal staples included acorns, tule roots, and seeds (Wallace 1978:462–470).

Goods not available locally were obtained through trade. Paiute and Shoshone groups on the eastern side of the Sierra Nevada were suppliers of obsidian. Shell beads and mussels were obtained from Salinan and Costanoan groups to the west. Trading relations with Miwok groups to the north yielded baskets and bows and arrows. Overland transport was facilitated by a network of trails, and tule rafts were used for water transport (Wallace 1978:462–470).

Most Northern Valley Yokuts groups had their first contact with Europeans in the late 1700s, when the Spanish began exploring the Delta. The gradual erosion of Yokuts culture began during the mission period, when escaped neophytes brought foreign (both European and Native American) habits and tastes back to their native culture, and Spanish expeditions to recover them followed. Epidemics of European diseases played a large role in the decimation of the native population. As a result of intensive proselytizing by the Spanish missionaries from 1805 to the 1820s, several Yokuts were removed from their tribal lands and relocated to the Missions to the west (Merriam 1955:188–225).

The secularization of the missions and release of neophytes set tribal and territorial adjustments in motion. Former neophytes returned to Native American groups other than their group of origin, and several polyglot “tribes” were formed. The final blow to the aboriginal population came with the Gold Rush and its aftermath. In the rush to the mines, native populations were pushed out or exterminated. Many natives became dependent on the Gold Rush economy for their subsistence, drastically changing their ways of life. Former miners who settled in the fertile valley applied further pressure to the native groups and altered the landforms and waterways of the valley. Many Yokuts resorted to wage labor on farms and ranches. Others were settled on land set aside for them on the Fresno and Tule River Reserves (Wallace 1978:462–470).

Today’s North Valley Yokuts are descended from a group of tribes with an extensive aboriginal territory in the San Joaquin Valley. As many as 63 tribes of Yokuts, consisting of an estimated 35,000 people, occupied the valley from Mount Diablo in the north to the Sierra foothills. The nearest Yokuts tribe to the project vicinity may have been the Miumne. According to Latta, the Miumne were said to range “from the San Joaquin River west to the summit of the inner Mount Diablo range” (Latta 1999: 1–2, 126), which encompasses the project area. No ethnographic research beyond Latta’s could be found to associate the Miumne with North Valley Yokuts or any specific contemporary Yokuts group. North Valley Yokuts today have a cultural representative, but do not appear to have an organized tribal entity.

Regulatory Setting

State

Senate Bill 18

Senate Bill (SB) 18 was established in September 2004 and requires local governments to consult with California Native American tribes prior to preparing or amending both general plans (as defined in California Government Code §65300 et seq.) and specific plans (as defined in Government Code §65450 et seq). The purpose of this consultation is to include California Native American tribes early in the planning process to allow for the identification and protection of cultural resources. This

process also allows cultural resources to be considered during the broad scale local and regional planning process rather than at a project level. The following includes a sequential list of local government responsibilities:

- Local governments must notify appropriate tribes, as identified by the NAHC, prior to the adoption or amendment of a general plan or specific plan.
- Tribes have 90 days from the receipt of notification to request consultation (Government Code §65352.3).
- Prior to the adoption or substantial amendment of a general plan or specific plan, local governments must refer the proposed action to the appropriate tribes, as identified by the NAHC, regardless of whether previous consultation has taken place.
- Local governments must allow a 45-day comment period (Government Code §65352).
- Local governments must provide notice of public to all tribes who have filed a written request for such notice at least 10 days prior to the hearing (Government Code §65092).

Although SB 18 does not explicitly regulate tribal cultural resources like Assembly Bill (AB) 52 (discussed below), the SB 18 outreach process could serve as an opportunity for local governments and tribes to consult about tribal cultural resources. SB 18 outreach was conducted for the proposed project and is discussed below.

Assembly Bill (AB) 52

Following adoption of SB 18, tribal cultural resources were identified as a distinct CEQA environmental category with the adoption of AB 52 in September 2014. For all projects that are subject to CEQA and filed an NOP or notice of negative declaration/mitigated negative declaration on or after July 1, 2015, AB 52 requires the lead agency on a proposed project to consult with the geographically affiliated California Native American tribes (CEQA Section 20180.3.1). The legislation creates a broad new category of environmental resources, “tribal cultural resources,” which must be considered under CEQA. AB 52 requires a lead agency to not only consider the resource’s scientific and historical value but also whether it is culturally important to a California Native American tribe.

AB 52 defines tribal cultural resources as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are included in or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR); included in a local register of historical resources, as defined in PRC Section 5020.1(k); or determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to the criteria of PRC Section 5024.1(c) (CEQA Section 21074).

The CRHR criteria for the listing of resources, as defined in PRC Section 5024.1(c), are the following:

- The resource is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
- The resource is associated with the lives of persons important in our past.
- The resource embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.
- The resource has yielded, or may be likely to yield, information important in prehistory or history.

AB 52 also sets up an expanded consultation process. For projects initiated after July 1, 2015, lead agencies are required to provide notice of the proposed projects to any tribe that is traditionally and culturally affiliated with the geographic area and that requested to be informed by the lead agency, following PRC Section 21018.3.1(b). If, within 30 days, a tribe requests consultation, the consultation process must begin before the lead agency can release a draft environmental document. Consultation with the tribe may include a discussion regarding the type of review necessary, the significance of tribal cultural resources, the significance of the project's impacts on the tribal cultural resources, and alternatives and mitigation measures recommended by the tribe. The consultation process will be deemed concluded when either (a) the parties agree to mitigation measures or (b) any party concludes, after a good-faith effort, that an agreement cannot be reached. Any mitigation measures agreed to by the tribe and lead agency must be recommended for inclusion in the environmental document. If a tribe does not request consultation, or otherwise assist in identifying mitigation measures during the consultation process, a lead agency may still consider mitigation measures if the agency determines that a project will cause a substantial adverse change to a tribal cultural resource.

No tribes have requested to be informed of CEQA projects in Merced County under PRC Section 21018.3.1(b). Therefore, AB 52 outreach is not required and was not conducted for the proposed project.

3.18.2 Environmental Impacts

This section describes the proposed project's potential impacts on cultural resources. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary. A detailed account of the methods and results used for this study can be found in the *Cultural Resources Inventory Report* in Appendix 3.5-1 (ICF 2022).

Methods for Analysis

This section evaluates whether construction and operation of the facilities associated with the proposed project would result in significant impacts related to tribal cultural resources.

To date, Merced County has not received requests any from tribes to be notified of projects under AB 52. Accordingly, no correspondence specified under the AB 52 regulations took place.

Although SB 18 does not explicitly regulate tribal cultural resources like AB 52, the SB 18 outreach process could serve as an opportunity for local governments and tribes to consult about tribal cultural resources. SB 18 outreach was conducted for the proposed project. On May 28, 2021, ICF sent a letter to the NAHC requesting a search of its Sacred Lands File and a list of individuals and organizations that may have knowledge of properties of cultural or religious importance to Native Americans in the vicinity of the project. On June 28, 2021, ICF received a response letter from the NAHC stating that a search of Sacred Lands File failed to identify any Sacred Lands within the project area. The NAHC also provided a list of Native American contacts that may provide information on Native American cultural resources within the area.

On October 20, 2022, the County sent letters to the following tribes notifying them of the proposed project and the opportunity to consult with the County under SB 18: Amah Mutsun Tribal Band, North Fork Rancheria of Mono Indians, Chicken Ranch Rancheria of Me-Wuk Indians, North Valley Yokuts Tribe, Dumna Wo-Wah Tribal Government, Picayune Rancheria of Chukchansi Indians,

Muwekma Ohlone Indian Tribe of the San Francisco Bay Area, Santa Rosa Rancheria Tachi Yokut Tribe, Nashville Enterprise Miwok-Maidu-Nishinam Tribe, and Southern Sierra Miwuk Nation. No requests for consultation were received between Oct 20, 2022 and Jan 18, 2023 (90 days).

On January 17, 2023, the Santa Rosa Rancheria Tachi Yokut Tribe submitted an email to the County. The email requested that: an archaeological and tribal monitor be present during all ground-disturbing construction activities; the archaeological monitor send daily monitoring reports to the tribe at the end of each day; the tribe is notified of any discoveries made when tribal monitors are not present; and native plants are used to revegetate the solar project site after completion of construction. The email did not request formal consultation under SB 18 or discuss any tribal cultural resources.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

Would the project 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 section 5020.1(k), or
- 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 Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Impacts and Mitigation Measures

Impact TCR-1: 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 section 5020.1; or 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? (With implementation of project-specific mitigation, no new or substantially more severe significant impacts beyond those considered in the previous EIR)

Impacts Identified in the Previous EIR

Assembly Bill 52 took effect in 2015, after the certification of the Community Plan in 2008. Therefore, the Community Plan EIR did not provide a standalone analysis of potential impacts to tribal cultural resources. However, the Community Plan EIR did analyze impacts to archaeological resources, which can also be determined to be tribal cultural resources. The Community Plan EIR evaluated the potential

impacts to non-evaluated documented and undocumented cultural resources that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.9-2 on pages 5.9-10-5.9-11 of the Community Plan EIR, which is incorporated by reference. As part of this analysis, the County consulted with the NAHC regarding the potential for important cultural resources and properties to be within or adjacent to the Community Plan area. A response from the NAHC indicated that a search of the sacred land files failed to indicate the presence of Native American cultural resources or traditional cultural places on or near the Community Plan area. Notwithstanding, the Community Plan EIR found that construction activities could damage or destroy previously unknown or known non-evaluated significant or potentially significant archaeological resources, but that mitigation would reduce this impact to a less-than-significant level through application of pre-construction site surveys and cultural resource assessment protocols. Refer to the discussion under Impact 5.9-2 on pages 5.9-10-5.9-11 of the Community Plan EIR, which is incorporated by reference.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change covering the solar project site to create a *Utility-Scale Solar Overlay*. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change and establishment of the solar overlay would facilitate development of the solar project. The change in land use designations for the area of the solar project site within the Community Plan would not change the impacts identified in the previous EIR because all of that land was proposed to be developed and therefore considered disturbed as a part of the Community Plan. Impacts from the on-site redesignations and Zone Change would be less than significant, consistent with the Community Plan EIR discussion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use. The off-site residential redesignation area remains undeveloped. Therefore, conditions have not materially changed since preparation of the Community Plan EIR. A high-density/medium-density residential use of the off-site residential redesignation area instead of a low-density residential use would not change the impacts identified in the Community Plan EIR, as the same lands would be disturbed. Impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR discussion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction and Decommissioning

No tribal cultural resources have been identified on the solar project site or in the project area after conducting background research and site surveys. As discussed above, outreach under AB 52 was not required or conducted. However, outreach under SB 18 was required and conducted. Although SB 18 does not explicitly regulate tribal cultural resources like AB 52, the SB 18

outreach process could serve as an opportunity for local governments and tribes to consult about tribal cultural resources. No tribal cultural resources were identified during the SB 18 outreach process for the proposed project. Therefore, there are no existing indications that tribal cultural resources are present on the solar project site or in the project area.

Notwithstanding, the potential exists for encountering previously undiscovered or undocumented tribal cultural resources, which could result in significant impacts to tribal cultural resources during construction. As discussed under Impact CUL-1 in Section 3.5, *Cultural Resources*, the solar project would implement project-specific Mitigation Measure CUL-1 to ensure that unanticipated discoveries of archaeological resources, which could include tribal cultural resources, are handled and recorded properly pursuant to California law, and that they are preserved in place or appropriately excavated by a qualified archaeologist. While Mitigation Measure CUL-1 is similar Community Plan Mitigation Measure 5.9-2, additional details have been added regarding procedures to be followed in case of an unanticipated discovery; thus, Mitigation Measure CUL-1 would replace Community Plan Mitigation Measure 5.9-2. Implementation of the mitigation would reduce impacts from solar project construction and decommissioning to a less-than-significant level, consistent with the Community Plan EIR discussion. Therefore, ***with implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure CUL-1: Unanticipated Discovery Procedures

Refer to Mitigation Measure CUL-1 under Impact CUL-1 in Section 3.5, *Cultural Resources*.

Operation

No tribal cultural resources have been identified on the project site or in the project area, and project operation would not have the potential to disturb tribal cultural resources not already encountered during construction. Therefore, operation of the solar project would have a less-than-significant impact, consistent with the Community Plan EIR discussion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

The portion of the solar project site outside of the Community Plan is approximately 561 acres and is designated in the County general plan as Agricultural. Development of this land was not considered in the Community Plan EIR.

As discussed above, no tribal cultural resources have been identified on the solar project site or in the project area. However, the potential exists for encountering previously undiscovered or undocumented tribal cultural resources, which could result in significant impacts to tribal cultural resources during construction. For the reasons discussed above, implementation of Mitigation Measure CUL-1 would adequately address these risks; impacts would be less than significant, consistent with the Community Plan EIR discussion. Therefore, ***with implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Off-Site Mitigation Site

The proposed project would establish an off-site mitigation site in an area of approximately 1,498 acres located south of the solar project site. With the exception of invasive plant species abatement and overland vehicle travel by biological monitors, no ground disturbance or construction would be required on the off-site mitigation site; rather, the site would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. Invasive plant species abatement and overland vehicle travel would involve minimal to no ground disturbance. A records search conducted for the off-site mitigation site indicates that there are 22 known cultural resources in the area and that approximately half of the off-site mitigation site has not been previously surveyed for cultural resources. Despite the fact that invasive plant species abatement and overland vehicle travel would require minimal ground disturbance, there is still potential for project activities to impact tribal cultural resources. Specific locations of project related activities to be conducted on the off-site mitigation site, and the extent of disturbance resulting from those activities are currently unknown. Therefore, the establishment of conservation activities on the mitigation site could result in new or substantially more severe significant impacts on historical resources beyond those identified in the previous EIR; additional mitigation would be required in the form of Mitigation Measure CUL-2 and Mitigation Measure CUL-3. With implementation of these mitigation measures, the impact from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR discussion. Therefore, ***with implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure CUL-2: Restrict Overland Vehicle Travel to Existing Roads During Biological Monitoring

Refer to Mitigation Measure CUL-2 under Impact CUL-1 in Section 3.5, *Cultural Resources*.

Mitigation Measure CUL-3: Avoidance of Archaeological Resources During Mechanical Invasive Plant Abatement Activities

Refer to Mitigation Measure CUL-3 under Impact CUL-1 in Section 3.5, *Cultural Resources*.

PG&E Substation Improvements

The proposed project would include transmission system improvements to PG&E's Los Banos substation in order to connect it to the solar project and facilitate the delivery of power. No tribal cultural resources have been identified in the PG&E substation improvement area, although the potential exists for encountering previously undiscovered or undocumented tribal cultural resources during construction. However, as discussed in Subsection 2.3.3 in Chapter 2, *Project Description*, PG&E will implement the following standard practice AMMs/BMPs to avoid and minimize impacts on archaeological resources, which could include tribal cultural resources:

- **PG&E AMM/BMP-15: Cultural Resources.** If any cultural resources are located during project activities, Utility Procedure ENV-8005P-01 will be implemented.
- **PG&E AMM/BMP-17: Cultural Resource Training.** Provide cultural resources awareness and response training to PG&E staff and contractors.

These standard AMMs/BMPs include providing cultural resources awareness and response training and stopping ground-disturbing work within 100 feet of discoveries until a cultural resource specialist can assess the discovery, and will ensure that if unknown tribal cultural resources are encountered during construction they will not be adversely affected. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR discussion. ***No new or substantially more severe impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, the entire proposed project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, would have a less-than-significant impact on tribal cultural resources with implementation of project-specific mitigation, consistent with the Community Plan EIR discussion. Therefore, ***with implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

3.18.3 References Cited

Printed References

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- ShIPLEY, William F. 1978. Native Languages of California. In Heizer (volume ed.), *California*. Handbook of North American Indians. Sturtevant, William C. (series ed.). Vol. 8. Washington, D.C.: Smithsonian Institution.
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3.19 Utilities and Service Systems

This section identifies and evaluates the project's potential impacts on utilities and service systems, including the following: water services, water supply, wastewater and stormwater, solid waste, and utilities. It also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan) and zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level, and potential impacts associated with the off-site General Plan and Community Plan Amendments are analyzed at a program level.

Relevant technical documentation used in this analysis includes:

- *Las Camas Solar Project Water Supply Assessment Merced County, California*, (Appendix 3.19-1)
- *Hydrology and Drainage Report for the Las Camas Solar Project, Merced County, California* (Appendix 3.10-1)
- *Solar Project Decommissioning and Reclamation Plan, Merced County, California* (Appendix 2-1)

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. These include evaluating water supply and existing and future water conditions, existing San Luis Water District (SLWD) facilities that were not identified in the site plan, and the disposal of solar panels during decommissioning.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.19.1 Existing Conditions

Environmental Setting

Regional Setting

Water

The project site is in a rural area and has limited utility service. Water supply and treatment facilities in the vicinity of the solar project site are owned and operated by the SLWD. SLWD facilities in the area include pipelines, water delivery turnouts, electrical cables, telemetry cables, and other facilities and their corresponding easements. Due to the historic agricultural use on the project site, urban water resources are not extensively developed. SLWD operates a water treatment facility

approximately 18 miles east of the solar project site that supplies treated water to 59 homes and six commercial customers. Currently water treatment facilities in the area are not producing recycled water, however they are capable of producing tertiary recycled water for beneficial use throughout the region. SLWD contains approximately 83 urban service connections and is not considered a public water supplier.¹

Water purveyors in the region receive water from the California Aqueduct via the Delta-Mendota Canal, a component of the Central Valley Project (CVP), a vast network of canals, aqueducts, and pump plants that conveys irrigation and municipal water to much of the state's Central Valley. Water supply in the region is also supplied by private groundwater irrigation wells, including the Mid-Cal well located 6 miles northwest of the project site. Pumping records for August 2021 to August 2022 indicated that the Mid-Cal well was pumped for irrigation for approximately 14 days in February, 17 days in March, 14 days in May, 54 days in late June to mid-September, and 14 days in late November to early December. The total volume pumped was approximately 502 acre-feet (af). There are very few groundwater users reliant on groundwater in the vicinity of the Mid-Cal well. Groundwater data of wells in the vicinity of the Mid-Cal well did not show long-term declines in groundwater elevations. While drought periods resulted in temporary declines in groundwater levels of as much as 17 feet, groundwater levels in the vicinity of the Mid-Cal well appear to consistently rebound after drought periods. The rebound of the groundwater levels to a common elevation demonstrates that overdraft is not occurring in the area of the Mid-Cal well and that the Upper Aquifer water budget is in balance (ICF 2024a).

Wastewater

A wastewater treatment facility managed by SLWD is approximately 18 miles east of the solar project site. The facility provides approximately 75,000 gallons per day of tertiary treatment. Wastewater management in the area is also provided by individual septic disposal systems. Future wastewater services in the project area are planned to be provided by a Public Utility Commission regulated wastewater service provider. Other sanitary sewer service facilities in the vicinity are owned and operated by the City of Los Banos (east of the project site) and the Santa Nella County Water District.

Stormwater

As discussed in Section 3.10, *Hydrology and Water Quality*, stormwater drainage is a function of all contributing subbasins. Fifteen subbasins drain to and through the project area, covering a total area of 4,739 acres. Subbasins 10 through 12 and 14 all drain into Subbasin 13. The outlet of Subbasin 13 drains through a culvert under I-5 and terminates at the California Aqueduct levee. Stormwater runoff in the project area drains by overland flow, is lost to evaporation, or infiltrates into the ground. None of the flow enters a storm drainage system and no other stormwater infrastructure is present (ICF 2024b).

Solid Waste

The Merced County Regional Waste Authority (RWA) is responsible for solid waste coordination and disposal activities. The RWA owns and operates the 2 regional landfills within Merced County. The Billy Wright Landfill is located at 17173 South Billy Wright Road and is permitted to receive 1,500 tons of waste per day. It has a remaining capacity of approximately 11,370,000 cubic yards and is

¹ The threshold for identification as a public water supplier is 3,000 or more service connections.

expected to reach its permitted capacity in 2054 (California Department of Resources, Recycling, and Recovery [CalRecycle] 2022a). This facility can accept all types of solid waste and recycling, including household hazardous wastes. It is currently under a contract with the Merced County Department of Public Works Solid Waste Division (SWD) which operates landfills under contract with RWA.

The other nearby landfill is the Highway 59 Landfill. It is located at 7040 North Highway 59 in Merced, approximately 36 miles northeast of the solar project site. This landfill is permitted to receive 1,500 tons of waste per day. It has a remaining capacity of approximately 28,025,334 cubic yards and is expected to reach its permitted capacity in 2030 (CalRecycle 2022b).

Electrical Services

Electricity in the area is provided by PG&E. PG&E facilities within the area consist of transmission and distribution lines, including 500-kV overhead transmission lines, 230/70-kV overhead transmission lines, and 69-kV overhead distribution lines, a substation, and local domestic service lines.

Local Setting

Solar Project Site

The solar project site is located on vacant, undeveloped land in a rural area. The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming. Although the area has limited utility services, SLWD facilities including pipelines, water delivery turnouts, electrical cables, telemetry cables, and other facilities and their corresponding easements cross the solar project site. Potential water would be provided by an existing private irrigation well located on AKT's Mid-Cal property 6 miles northwest of the solar project site. The well overlies the Delta-Mendota Subbasin. Three 230 kV transmission lines and a 69 kV transmission line run north-south through the project site and intersect at the western corner of the solar project site. Four underground utility easements cross the eastern portion of the solar project site, and one transmission line easement crosses the southwestern portion of the site. A San Luis Water District (SLWD) water line and corresponding 70-foot-wide easement also crosses through the western portion of the solar project site. A 70-foot-wide access easement for the Merced County Regional Waste Authority (RWA), which owns the Billy Wright Landfill to the south, traverses the solar project site from north to south (see Figure 2-2).

PG&E Substation Improvements

The environmental setting of the solar project site is substantially similar to the character of the solar project site, described above.

Off-Site Mitigation Site

The mitigation lands are located approximately 5 miles south of the solar project site, immediately south of Los Banos Reservoir. The approximately 1,498-acre site consists of grassland habitat used for grazing in a rural area. There are no known water including stormwater or utility facilities or their corresponding easements. Wastewater in the area is provided by individual septic disposal systems.

Off-Site Residential Redesignation Area

The environmental setting of the off-site residential redesignation area is described on page 5.7-1 of the Community Plan EIR and is incorporated by reference. As described in that section, the offsite residential redesignation area has a history of agricultural uses. As a result, urban water resources are not extensively developed. Stormwater in the area drains by overland flow, channelized flow, and shallow groundwater flow, and discharge ultimately flows into adjacent lakes or canals or is lost to evaporation or percolation in underlying soils. The Community Plan includes a Master Plan and Conceptual Design for Water and Wastewater Facilities, which was developed in coordination with SLWD staff. This plan would provide a basis for final design of the water and wastewater treatment facilities proposed for the Community Plan area, if and when it is developed. Capacity of the proposed water treatment plant² is intended to serve the needs of development within the Community Plan area. The water distribution system would consist of filtered water storage, pumping, transmission and distribution piping, supply mains, and appurtenant valves. SLWD would be responsible for constructing the regional sewer system leading to the proposed wastewater plant and the Community Plan would be responsible for construction of collection sewers to serve the Community Plan area. The Billy Wright Landfill would serve the Community Plan area, including the offsite residential redesignation area. Electricity and natural gas would be provided by PG&E.

Regulatory Setting

State

Refer to Section 3.10, Hydrology and Water Quality, of this SEIR, for a discussion of the Porter-Cologne Water Quality Control Act of 1969, Groundwater Management Act of 1992, and the Sustainable Groundwater Management Act of 2014.

Senate Bill 610

Senate Bill (SB) 610 became effective on January 1, 2002, amending the California Water Code (CWC) by requiring detailed analysis of water supply availability for certain types of development projects. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies and that land use decisions for certain large development projects are fully informed as to whether sufficient water supplies are available to meet project demands. SB 610 requires preparation of a water supply assessment (WSA) for any project subject to CEQA that meets any of the following criteria:

1. A proposed residential development with more than 500 dwelling units;
2. A proposed shopping center or business with more than 1,000 employees or more than 500,000 square feet of floor space;

² The proposed water and wastewater treatment plants would be co-located on a 41-acre site immediately east of and outside of the Community Plan area. The site is south of Billy Wright Road and west of Interstate 5, and conceptually approved by the SLWD Board. The location was selected to take advantage of consolidation of the water and wastewater treatment sites (one site rather than two sites), to increase operation efficiencies, and in consideration of proximity to other water and wastewater treatment facilities under construction by SLWD. The solar project would not interfere with the proposed water treatment plant.

3. A proposed commercial office building with more than 1,000 employees or more than 250,000 square feet of floor space;
4. A proposed hotel or motel, or both, with more than 500 rooms;
5. A proposed industrial, manufacturing, or processing plant or industrial park that would house more than 1,000 persons, occupy more than 40 acres of land, or have more than 650,000 square feet of floor area;
6. A mixed-use project that would include one or more of the projects specified above; or
7. A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling-unit project.

Water Supply Assessment and Verification

California Water Code Section 10910 requires a county to identify any water system whose service area includes a given project site and any water system adjacent to the project site that is or may become a “public water system” that may supply water for the project. Water Code Section 10912(c) defines “public water system” as “a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections.” If a county is not able to identify any public water system that may supply water for a particular project, then it is obligated to prepare a water supply assessment (WSA). Appendix 3.19-1 of this report provides the WSA for the project.

California Model Water Efficient Landscape Ordinance (2015)

New development and retrofitted landscape water efficiency standards are governed by the Model Water Efficient Landscape Ordinance (MWELo) (California Code of Regulation Title 23, Division 2, Chapter 2.7). The purpose of MWELo is to plan, design, install, manage and maintain landscapes with the watershed-based approach to improve California's environmental conditions and provide benefits and realize sustainability goals. MWELo establishes water management practices and water waste prevention for landscape irrigation needs. All local agencies must adopt, implement, and enforce the MWELo or a local Water Efficient Landscape Ordinance (WELo) that is at least as effective as the MWELo. Usually, local agencies that adopt WELos create a more stringent ordinance than MWELo. The purpose of water efficient landscape ordinances is to not only increase water efficiency but to improve environmental conditions in the built environment. Merced County has adopted the state MWELo through Chapter 18.36.030, Water Efficient Landscape Ordinance (WELo), through the county's zoning code.

California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939, Public Resource Code Section 40000 et seq.) was enacted to reduce, recycle, and reuse solid waste generated in the state to the maximum extent feasible. Specifically, AB 939 required local governments to identify an implementation schedule to divert 50 percent of the total waste stream from landfill disposal by 2000. AB 939 also requires local governments to promote source reduction, recycling, and safe disposal or transformation. Counties and cities must also maintain the 50 percent diversion specified by AB 939 beyond 2000. In 2011, AB 341 amended AB 939 to implement the state policy that no less than 75 percent of solid waste generated be reduced, recycled, or composted by the year 2020, and maintained annually thereafter. In addition, AB 341 required CalRecycle to develop strategies to achieve the state's policy goal. CalRecycle

recommends strategies that address the 75 percent goal and that serve other critical objectives: protecting public health and safety, reducing greenhouse gases (GHG), expanding manufacturing infrastructure and bringing green jobs to California, reducing reliance on unstable export markets, reducing local government costs for hard-to-manage wastes, and increasing production of renewable energy and fuel.

CALGreen Construction Waste Management Requirements

CALGreen requires covered projects to recycle and/or salvage for reuse a minimum 65% of the nonhazardous construction and demolition waste or meet the applicable local construction and demolition waste management ordinance, whichever is more stringent (CALGreen 2020). This waste diversion requirement includes all locally permitted additions and alterations to non-residential projects.

California Code of Regulations, Title 22

Title 22 of the California Code of Regulations, also known as the CALGreen, outlines an array of requirements with respect to the disposal and recycling of hazardous and universal wastes. Specific standards and requirements are included for the identification, collection, transport, disposal, and recycling of hazardous wastes. Additional standards are applied to collection, transport, disposal, and recycling of universal wastes, identified in Section 66273.9 of Title 22, including batteries, electronic devices, mercury-containing equipment, lamps, cathode ray tubes, and aerosol cans. Requirements are detailed for recycling, recovery, returning spent items to the manufacturer, or disposal at an appropriately permitted facility. Division 4.5 of Title 22 also indicates restrictions and standards relevant to waste destination facilities, and provides authorization requirements for various waste handlers. Title 22 includes California's Universal Waste Rule and other waste handling and disposal requirements.

Utility Notification Requirements

California Government Code Section 4216 et seq. requires owners and operators of underground utilities to become members of, participate in, and share the costs of a regional notification center for excavation projects. Underground Service Alert North (USA North) is the notification center for the project site. It receives planned excavation reports and transmits the information from these reports to all participating members with underground facilities at the location of excavation. The USA North members mark or stake their facilities, provide information, or give clearance to dig following the notifications (USA North 2018).

Protection of Underground Infrastructure

The responsibilities for persons excavating in the vicinity of utilities are detailed in Section 1, Chapter 3.1 "Protection of Underground Infrastructure," Article 2 of California Government Code 4216-4216.9. This law requires that an excavator must contact a regional notification center at least two days prior to excavation of any subsurface installation. Any utility provider seeking to begin a project that may 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 required to mark the specific location of their facilities within the work area prior to the start of project activities in the area.

Local

2030 Merced County General Plan

The public facilities and services element of the *2030 Merced County General Plan* includes the following pertinent goals and policies.

Water

- **Goal W-1:** Ensure a reliable water supply sufficient to meet the existing and future needs of the County.
 - **Policy W-1.1:** Countywide Water Supply. Ensure that continued supplies of surface and groundwater are available to serve existing and future uses by supporting water districts and agencies in groundwater management and water supply planning; requiring that new development have demonstrated long-term water supply; and assisting both urban and agricultural water districts in efforts to use water efficiently.
 - **Policy W-1.2:** Demonstrating Sufficient Water Supply for New Development. Require all new development within the adopted service area of a water purveyor to demonstrate adequate quantity and quality of water will be available prior to issuing building permits.
 - **Policy W-1.7:** Water Sufficiency Requirement. Require new developments to prepare a detailed source water sufficiency study and water supply assessment per Title 22 and SB 610, consistent with any Integrated Regional Water Management Plan or similar water management plan. This shall include studying the effect of new development on the water supply of existing users, with public input.
- **Goal W-3:** Maximize the efficient use and reuse of water supplies through water conservation, water recycling, and public education.
 - **Policy W-3.3:** Water System Rehabilitation. Encourage the rehabilitation of irrigation systems and other water delivery systems to reduce lost water and increase the efficient use and availability of water.
- **Goal PFS-5:** Ensure the provision of adequate utilities to the residents of Merced County.
 - **Policy PFS-5.3:** New Transmission Lines and Distribution Lines. Encourage new transmission and distribution lines within existing utility easements and rights-of-way or utilize joint-use of easements among different utilities to avoid impacting existing communities.
 - **Policy PFS-5.7:** Utility System Expansion. Coordinate with local gas and electric utility companies in the design and location, and appropriate expansion of gas and electric systems, while minimizing impacts to agriculture and minimizing noise, electromagnetic, visual, and other impacts on residents.
- **Goal PFS-7:** Provide adequate fire and emergency medical facilities and services to protect County residents from injury and loss of life, and to protect property from fire.
 - **Policy PFS-7.3:** Water Service Standards. Require all development within unincorporated communities to be served by water supplies, storage, and conveyance facilities supplying adequate volume, pressure, and capacity for fire protection.

Wastewater

- **Goal W-2:** Ensure the adequate wastewater collection, treatment, and disposal within the County.
 - **Policy PFS-2.1:** Water and Sewer Expansion. Encourage public sewer system operators to maintain and expand their systems to meet the development needs of the County.
 - **Policy PFS-2.2:** Wastewater Treatment and Disposal Capacity. Require applicants for discretionary projects located within special district boundaries to provide a “Can and Will Serve” letter or other documentation from the appropriate sewer and/or water district demonstrating the commitment of capacity prior to acceptance of the discretionary application as complete. Discretionary applications generally include general plan amendments, zone changes, conditional use, location and development, tentative subdivision and administrative permit applications.

Stormwater

- **Goal PFS-3:** Ensure the management of stormwater in a safe and environmentally sensitive manner through the provision of adequate storm drainage facilities that protect people, property, and the environment.
 - **Policy PFS-3.2:** Stormwater Facilities in New Development. Require that new development in unincorporated communities includes adequate stormwater drainage systems. This includes adequate capture, transport, and detention/retention of stormwater.

Solid Waste

- **Goal PFS-4:** Ensure the safe and efficient disposal and recycling of solid and hazardous waste generated in the County.
 - **Policy PFS-4.5:** Solid Waste Service Availability. Require all new development to adequately provide solid waste storage, handling, and collection through the development review and permitting process.
 - **Policy PFS-4.6:** Solid Waste Reduction. Support and promote feasible waste reduction, recycling, and composting efforts.

Utilities

- **Goal PFS-5:** Ensure the provision of adequate utilities to the residents of Merced County.
 - **Policy PFS-5.1:** Adequate Utility Facilities and Services. Encourage the provision of adequate gas and electric, communications, and telecommunications service and facilities to serve the needs of existing and future residents and businesses.
 - **Policy PFS-5.2:** Utility Easements. Require utility easements to be obtained on individual parcels at the subdivision map approval stage to provide adequate area for installation of improvements, including sewer, water, cable-television, and telephone lines.
 - **Policy PFS-5.3:** New Transmission and Distribution Lines. Encourage new transmission and distribution lines to be sited within existing utility easements and rights-of-way or utilize joint use of easements among different utilities to avoid impacting existing communities.
 - **Policy PFS-5.4:** Electrical Interference. Require mitigation of electrical interference to adjacent land uses in the placement of electrical and other transmission facilities.

- **Policy PFS-5.5:** Contingency Plans: Require utility and pipeline companies and districts maintain contingency plans for responding to potentially hazardous situations such as pipeline breaks and fallen power lines.
- **Policy PFS-5.7:** Utility System Expansion. Coordinate with local gas and electric utility companies in the design and location, and appropriate expansion of gas and electric systems, while minimizing impacts to agriculture and minimizing noise, electromagnetic, visual, and other impacts on residents.

Villages at Laguna San Luis Community Plan

The Villages of Laguna San Luis Community Plan was adopted in September 2008 and provides a long-range growth and development plan for approximately 6,200 acres located west of I-5 along SR 152 and SR 33 in western Merced County (County 2008). The land use plan, community design plan, open space plan, water and sewer infrastructure plan, and the community facilities plan of the Villages of Laguna San Luis Community Plan include the following pertinent goals and policies.

Water and Wastewater

- **Goal WSIP 1:** Water and wastewater infrastructure adequately serves the urban needs of the Villages CP.
 - **Policy 1.A.2:** Apply this Water and Sewer Infrastructure Plan to develop potable water treatment and distribution infrastructure systems with each development phase.
 - **Policy 1.A.3:** Apply this Water and Sewer Infrastructure Plan to develop wastewater collection and treatment, and reclaimed water distribution systems with each development phase which help implement a community-wide wastewater system.
 - **Policy 1.A.4:** Consider use of interim or independent wastewater collection and treatment facilities within individual development phases where it can be demonstrated the community-wide wastewater treatment and reclaimed water distribution system is not compromised.
 - **Policy 1.B.1:** Establish a "fair share" funding mechanism for urban water and wastewater infrastructure services and facilities that are required to serve the Villages CP community as a whole in conjunction with the Capital Facilities Phasing Study required in each Implementation Plan.
 - **Policy 1.B.2:** Ensure that water and wastewater infrastructure services and facilities for each development phase, identified and approved through Implementation Plans, are adequately funded.
 - **Policy 1.B.3:** Ensure that, for development phases which propose interim wastewater infrastructure services and facilities, appropriate levels of funding are applied to or set aside for the implementation of future community-wide urban infrastructure services and facilities.
- **Goal WSIP 2.0:** An urban community with water and wastewater infrastructure systems planned and designed to conserve water resources along with landscape areas designed to conserve water.
 - **Policy 2.A.1:** Cooperate with the San Luis Water District to establish requirements for potable water use fixtures which are designed to conserve water use and which will apply to each development phase.
 - **Policy 2.A.2:** Plan and design a reclaimed water treatment and re-use distribution system which enables the multiple use of water resources.

- **Policy 2.B.1:** Apply this Water and Sewer Infrastructure Plan in conjunction with the Community Design Plan, Section 4.3, which promote the conservation of water resources within each development phase.
- **Goal CD1.0:** A balanced, functional, and attractive community which establishes its own identity and character through community, architectural, and landscape design.
 - **Policy 1.I.8:** Underground all community-wide utilities such as electric, telephone and cable TV.
 - **Policy 3.C.1:** Provide emergency water in a County Fire Department mobile water tender, or locate water in a naturally-occurring or man-made containment structure, as long as the specified quantity is immediately available.
 - **Policy 3.C.2:** Provide emergency water on-site prior to completion of road construction where a community water system is approved.
 - **Policy 3.C.3:** Consider the use of sprinkler systems for buildings in areas where the County Fire Department determines alternate fire protection measures are not adequate.

Solid Waste

- **Goal CFP 1.0:** Public facilities and services are provided that adequately meet the needs of the Villages CP.
 - **Policy 1.D.1:** Ensure that adequate solid waste disposal facilities are provided to meet the needs of the Villages CP as development occurs, in coordination with County Department of Public Works.
- **Goal LU 4.0:** Placement and design of structures that minimize land use conflicts.
 - **Policy 4.A.5:** Establish means to minimize conflicts between residential neighborhoods and the Billy Wright Road Landfill.

Utilities

- **Goal OS 1.0:** Natural features and systems are preserved as components of the Community Open Space Plan.
 - **Policy 1.D.1:** Utilize overhead electrical transmission line easements and underground pipeline easements as open space corridors, and ensure adequate setbacks for public safety.
- **Goal OS 3.0:** Open Space is maintained and enhanced to improve community aesthetics and provide a contrast to developed areas.
 - **Policy 3.A.6:** Place utility lines underground whenever possible and route overhead high voltage lines that cannot be placed underground to be as inconspicuous as possible.
- **Goal LU 4.0:** Placement and design of structures that minimize land use conflicts.
 - **Policy 4.A.4:** Ensure access to and minimize hazards from utility pipelines which traverse the community through utilization as components of the open space trail and circulation systems.
 - **Policy 4.A.6:** Avoid incompatibility conflicts between the major PG&E substation and adjacent land uses.

San Luis Water District Rules and Regulations

The SLWD has adopted rules and regulations pursuant to CWC Section 35423 to effect orderly, efficient, and equitable distribution and use of water (refer to Appendix G of the WSA in Appendix 3.19-1 of this EIR). Rules pertinent to the project include:

- **Rule No. 6 – Water Allocations.** Establishes that the SLWD shall determine on an annual basis the quantity of CVP water to be set aside for distribution system losses and shall allocate the remaining water to eligible parcels on a pro-rata acreage basis. The allocation may be divided into specific quantities of agricultural and M&I water, and eligible parcels may be designated to receive either agricultural or M&I allocation. A parcel owner must file a Water Application with the SLWD to be eligible for an allocation. Once allocated, water shall remain with the landowner, and shall not transfer with the property in the event of a lease transfer or change in ownership unless a transfer is approved by the SLWD pursuant to Rule 7.
- **Rule 7 – Water Transfers and Relinquishment of Entitlement.** Establishes that all proposed water transfers and implementation of all water transfers must be approved and managed by the SLWD. Rule 7 provides procedural requirements for Agricultural Allocated, Individually Acquired, and Supplemental Water transfers, and establishes that all water transfers are either Annual or Multi-year Transfers. Part 7(d) provides that a water allocation may be permanently relinquished to the SLWD, or to one or more parcels owned by the SLWD, subject to the requirements of the rule, and that the SLWD may sell the water at its discretion.
- **Rule No. 24 – Allocation Eligibility for Energy Generation and/or Energy Storage Project Parcel.** Establishes that parcels that can receive an agricultural water allocation according to Rule No. 6 with three acres or more proposed for or containing energy generation and/or energy storage (“Energy Parcel”) shall execute a Solar Water Management Agreement with the SLWD. The Energy Parcel will be allocated up to one (1) acre-foot per 100 acres but no more than ten (10) acre-feet (“Energy Project Parcel Allocation”). The Energy Project Parcel Allocation is non-transferable and shall be used for dust control, pest control, panel cleaning and other operation and maintenance functions. Structures or enclosures that facilitate staffing accommodations such as offices, bathrooms, repair shops that require a water supply or fire protection using the SLWD’s water supply are prohibited. An Energy Project Parcel that operates and maintains an active agricultural operation dependent on the SLWD’s water supply may be relieved of the Water Management Agreement at the sole discretion of the SLWD.

Merced County Groundwater Mining and Export Ordinance

The Merced County Groundwater Mining and Export Ordinance (Chapter 9.27 of the Merced County Code) regulates the movement of groundwater across basins boundaries, manages the demand for groundwater, and increases local data collection efforts to help manage groundwater resources. Under the ordinance, groundwater mining and the export of groundwater outside of a source basin is only allowed with a permit, allowing the County an opportunity to evaluate individual projects and their potential impacts to groundwater resources. Projects requesting to move groundwater outside of a source basin are required to submit an application to the County and secure a permit from the Board of Supervisors.

3.19.2 Environmental Impacts

This section describes the proposed project's potential impacts on utilities and service systems. It explains the methods used to determine the impacts of the project and lists the thresholds used to conclude whether an impact would be significant.

Methods for Analysis

Potential effects are assessed with respect to utilities and service systems based, in part, on findings in the Hydrology and Drainage Report prepared for the Project, included as Appendix 3.10-1. A WSA (Appendix 3.19-1) was prepared to evaluate the sufficiency of available water supplies to meet Project water demands.

Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

Would the project:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?
- Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- 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?
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Impacts and Mitigation Measures

Impact UT-1: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts to new or expanded water treatment, electric power, and natural gas facilities that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.7-2, 5.7-3, 5.7-5, 5.7-6, 5.7-9 and 5.7-10, on pages 5.7-18—5.7-37 of the Community Plan EIR, which is incorporated by reference. Conditions at and around the redesignation area have not changed since certification of the Community Plan EIR in a way that

would change this impacts analysis because existing facilities have been managed and maintained in compliance with the appropriate federal, state, and local wastewater, stormwater, and electric power, and natural gas regulations and requirements. The Community Plan EIR found that buildout of the Community Plan would generate demand for water treatment and recycled water storage and disposal facilities which cannot be met by SLWD's existing water treatment facilities. Community Plan Mitigation Measures 5.7-2 and 5.7-6 would ensure adequate water treatment and recycled water storage and disposal facilities are provided concurrently with the proposed development if it occurs. Development of a 22 million gallon per day water treatment plant and four-million-gallon storage tank would be required to meet treatment demands, and the Community Plan EIR found that construction and operation of the water treatment plant could result in significant and unavoidable impacts even with implementation of all feasible mitigation.

The Community Plan EIR found that buildout of the Community Plan would increase demand for electricity, natural gas, and associated infrastructure. PG&E indicated that it would be able to provide electricity and natural gas to the Community Plan area, and the increase in demand for electricity and natural gas would not be substantial in relation to the existing electricity and natural gas consumption in PG&E's service area. Therefore, the Community Plan EIR concluded that impacts to electricity, natural gas, and associated infrastructure would be less than significant.

Overall, the Community Plan EIR found that buildout of the Community Plan would result in significant and unavoidable impacts with implementation of Community Plan Mitigation Measures 5.7-2 and 5.7-6.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change covering the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below. The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct construction of new or expanded water treatment, electric power, or natural gas facilities. While the proposed off-site residential redesignation would increase the planned density within the residential redesignation area, it would not change the overall medium-density/high-density residential capacity of the approved Community Plan. Instead, it would redistribute already approved medium-density/high-density residential capacity to a different area within the Community Plan area. Water, electricity, and natural gas demand were evaluated in the build out analysis of the Community Plan and would not increase with the proposed off-site residential redesignation. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. Further,

future development within the off-site residential redesignation area associated with the solar project would not change from the electricity, water, wastewater, or natural gas demand analyzed in Community Plan EIR, because it would not result in additional development beyond that contemplated in the Community Plan EIR. Therefore, impacts from the off-site residential redesignation would remain significant and unavoidable, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

The solar project includes the construction of a new electrical facility. The project includes improvements to PG&E's Los Banos substation. Construction of a 230-kV transmission line (gen-tie line) would connect the proposed project to the existing PG&E Los Banos substation located west of the subject property. A new 230-kV breaker-and-a-half (BAAH) bus section and a new 230-kV enclosure would be constructed within the newly modified substation area. New power circuit breakers, air disconnect switches, voltage transformers, control, power and communication cables, underground fiber cables and fiber terminations, yard lighting, and a ground grid would also be constructed within the substation. Outside the fenced area but also on PG&E-owned substation property, communication cables, conduit, associated IT equipment, RTU relay panel, meter receptacles, and a meter cabinet would be constructed. Up to approximately 10 structures would be installed on substation property to support a new 230 kV transmission line connecting the substation facilities to the adjacent solar project. To allow crossing from PG&E property to the solar project, approximately four existing PG&E towers may be raised. No additional utility construction or relocations would be needed to serve the project during construction.

Water usage during construction would be limited to soil conditioning, road maintenance, dust suppression, and miscellaneous purposes. As discussed in Chapter 2, *Project Description*, water for construction would either be supplied by the SLWD through existing connections to the solar project site or be transported to the project site in 8,000-gallon water trucks. A local sanitation company would provide and maintain appropriate construction sanitation facilities. Sanitation facilities during construction, including portable toilets and sinks, would be placed at each staging area. Impacts from solar project construction would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. Therefore, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

As described above, the solar project includes the construction of a new electrical facility. This analysis addresses if additional utility construction or relocation is needed to serve the project, beyond what is already described in the project description. The project includes improvements to PG&E's Los Banos substation including addition of a 230-kV transmission line to connect the proposed project to the existing PG&E Los Banos substation. No additional electrical utility construction or relocations would be needed to serve the project.

No new or expanded water or wastewater treatment, storm water drainage, natural gas, or telecommunications facilities would be needed for operation of the project. Project construction and operation water may be supplied through a Construction Water Agreement and Water Management Agreement request to the SLWD. As an alternative, construction and operation

water supply could be sourced from an existing private irrigation well on AKT's Mid-Cal property (known as the Mid-Cal well) through a pumping purchase agreement with AKT to allow for use of the pumped groundwater. No new wells would be drilled and no existing wells would be modified to serve the proposed project. As noted in the Project Description, one 5,000-gallon water tank would be permanently installed in the northwest portion of the solar project site to store water for panel washing, irrigation of the vegetated screen, and fire flow and would not require treatment. Increases in storm water discharge for the Billy Wright Road Drainage at the I-5 crossing would be absorbed into the on-site soils and therefore would not be significant. The nominal changes in peak discharge and runoff volume are not anticipated to exceed the capacity of the existing culvert. No new stormwater facilities are planned for construction. The project would not require modifications to wastewater treatment, storm drainage, or natural gas facilities, as the construction and operation of the solar project would not require connections to these utilities. Community Plan Mitigation Measure 5.7-2 applies to subdivision maps and would not apply to the solar project. Community Plan Mitigation Measure 5.7-6 applies to projects that would require building permits and use recycled water, and would not apply to the solar project. Therefore, impacts from operation of the solar project would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning and site reclamation of the solar project site would begin immediately after the 35-year lifespan of the solar project, expected in 2060. Impacts from decommissioning are expected to be similar to impacts from construction. Decommissioning would not involve the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities. Therefore, impacts from decommissioning of the solar project would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Impacts relating to the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities resulting from the portion of the solar project site that is outside of the Community Plan boundary are included in the analysis above.

Off-Site Mitigation Site

The project would establish an off-site mitigation site of approximately 1,498 acres of grassland habitat. The habitat area would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. Establishment and management of the off-site mitigation site would not require the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities. Therefore, impacts from the off-site mitigation

site would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The PG&E substation improvements involve installing new electric power equipment in an existing substation. The overall project involves the construction of new electrical infrastructure, as is evaluated throughout this SEIR. No additional water, wastewater, or natural gas demand would be generated. The PG&E substation improvements would result in a permanent ground disturbance of approximately 10.3 acres located adjacent to the southwest corner of the PG&E substation, resulting in a slight increase in impervious area. Approximately 0.1 acre would be permanently disturbed to construct a 230 kV transmission gen-tie line to connect the solar project to the PG&E substation. However, no additional storm drainage infrastructure is needed, as further discussed in Section 3.10, *Hydrology and Water Quality*. Therefore, PG&E substation improvements would not require the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities. Impacts from the PG&E substation improvements would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site components would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. Impacts from the off-site residential redesignation component would remain significant and unavoidable, consistent with the Community Plan EIR conclusion. ***Considering the project as a whole, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact UT-2: Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts to water supply that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.7-1 on pages 5.7-10 through 5.7-18 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan would create substantial demand for potable water supply. The Community Plan EIR further found that water supply demands for the Community Plan area could not be met by existing SLWD CVP water supplies, and no contracts were in place for ensuring potential water supply sources would be available to meet proposed project demands. The Community Plan EIR stated that efforts are being pursued to secure

adequate water supplies for the project, and included Mitigation Measure 5.7-1 to ensure supplies would be available prior to project development. However, the Community Plan EIR stated that it is uncertain whether evaluated alternative supplies would be the water supply sources that would ultimately serve the development. Therefore, the Community Plan EIR concluded that impacts to water supply would be significant and unavoidable.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change covering the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below. The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct demand for water supply. While the proposed off-site residential redesignation would increase the planned density within the residential redesignation area, it would not increase the overall medium-density/high-density residential capacity or associated demand for water of the approved Community Plan. Instead, it would redistribute already approved medium-density/high-density residential capacity to a different area within the Community Plan area. The proposed off-site residential redesignation would ensure that the same number of medium-density/high-density housing units within the Community Plan area. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. Therefore, the off-site residential redesignation would not increase the overall water demand from Community Plan buildout studied in the Community Plan EIR.

Conditions at and around the off-site residential redesignation area have not changed materially since certification of the Community Plan EIR. Sufficient on-site groundwater supplies remain unavailable to serve the off-site redesignation area. The water sources identified in the Community Plan EIR to serve Community Plan buildout were CVP entitlement with groundwater banking to firm the supply, San Joaquin River Exchange Contractors Water Authority Water Transfer, and reclaimed water exchange. As was the case when the Community Plan EIR was prepared, water supply demands for the Community Plan may not be met by existing SLWD CVP water supplies, and no contracts are in place for ensuring potential water supply sources would be available to meet expected demands of buildout at the off-site residential redesignation area. Therefore, as was the case when the Community Plan EIR was prepared, impacts on water supply would remain significant and unavoidable with the off-site residential redesignation. However, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

Construction comprises the majority of the project's water demand. Water usage during construction would be required for soil conditioning, road maintenance, dust suppression, and miscellaneous purposes. It is estimated that up to 370 af of water would be required during the project's construction phase over approximately 70 weeks (16 months).

As discussed in Chapter 2, *Project Description*, water for construction would either be supplied by the SLWD through existing connections to the solar project site or be transported from the Mid-Cal well to the project site in 4,000-gallon water trucks (ICF 2024a). The method that is ultimately implemented will depend on which approvals are granted. As discussed in Section 2.4, *Required Approvals*, in Chapter 2, *Project Description*, the project would require the issuance of a Construction Water Agreement and Solar Water Management Agreement by the SLWD, or the approval of a Groundwater Export Permit by the County. The Water Supply Assessment (Appendix 3.19-1) evaluated the sufficiency of both potential water supplies to serve construction of the project.

The SLWD has adopted rules and regulations pursuant to CWC Section 35423 to effect orderly, efficient, and equitable distribution and use of water. To address variability in CVP deliveries and water transfers year-to-year, SLWD determines whether new projects can be served on a case-by-case basis through the issuance of Construction Water Agreements and Solar Water Management Agreements pursuant its Rules and Regulations. The Agreements consider known water supply and water demands, customer reallocations/conversions, and exchange programs to determine whether new projects can be served. The project applicant will submit a Construction Water Agreement request to the SLWD for project construction. The SLWD will review the requests and determine whether sufficient supplies are available. Under Rule No. 24, the project could receive up to 10 af per year (afy). This would provide a small portion of the 370 af construction water demand. Additional water transfers (e.g., reallocating agricultural supplies to M&I supplies), made at the sole discretion of SLWD, could serve the remaining construction demand of 360 af. If the SLWD issues a Construction Water Agreement for the project, sufficient water supplies would be available to serve the project's construction water demand.

Under the well option, recent pumping records indicated that the total volume pumped by the Mid-Cal well for irrigation was approximately 502 af. The temporary filling of a water truck during irrigation periods is not anticipated to alter irrigation pumping periods. Because the Mid-Cal well pumps at a rate of 1,000 gallons per minute, the well would require pumping for four minutes to fill a 4,000-gallon water truck during periods when the Mid-Cal well is not being pumped for irrigation. As a result, the longest individual pumping durations during the construction phase of the Project would be the same as under existing conditions, ranging from 14 days to 54 days. Water demand in the first year of construction (i.e., 2024) is estimated to be 245 af, equivalent to approximately 0.14 percent of the total groundwater inflow, 0.24 percent of the annual average groundwater pumping volume, and 0.94 percent of the annual overdraft in the GSP area. The 2025 construction water demand of 125 af (and associated project groundwater inflow and pumping volume compared to the GSP area) is equivalent to half of the 2024 amount. This volume represents such a small proportion of the average groundwater inflow, average annual pumping, and projected overdraft that the project's effects on groundwater volumes and groundwater sustainability within the Delta-Mendota Subbasin are considered to be minimal.

The Water Supply Assessment concludes that sufficient water supplies are available to serve project construction during normal, dry and multiple dry years under either water scenario, with issuance of the required approvals (ICF 2024a). Without issuance of the approvals, the project would not proceed as proposed and subsequent CEQA review may be required. Community Plan

Mitigation Measure 5.7-1 applies to implementation plans and subdivision maps and would not apply to the solar project. Therefore, impacts from construction of the solar project would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

During operation, the project would use a minimal amount water for solar panel washing, irrigation, and fire flow. Panel washing is expected to occur every year across 25 percent of the project panels. The average water consumption for operation of the facility is expected to be up to 5 afy.

As discussed in Chapter 2, *Project Description*, water for operation would either be supplied by the SLWD through existing connections to the solar project site or be transported from the Mid-Cal well to the project site in 4,000-gallon water trucks (ICF 2024a). The method that is ultimately implemented will depend on which approvals are granted. As discussed in Section 2.4, *Required Approvals*, in Chapter 2, *Project Description*, the project would require the issuance of a Solar Water Management Agreement by the SLWD, or the approval of a Groundwater Export Permit by the County. The Water Supply Assessment (Appendix 3.19-1) evaluated the sufficiency of both potential water supplies to serve operation of the project.

The SLWD has adopted rules and regulations pursuant to CWC Section 35423 to effect orderly, efficient, and equitable distribution and use of water. To address variability in CVP deliveries and water transfers year-to-year, SLWD determines whether new projects can be served on a case-by-case basis through the issuance of Construction Water Agreements and Water Management Agreements pursuant its Rules and Regulations. The Agreements consider known water supply and water demands, customer reallocations/conversions, and exchange programs to determine whether new projects can be served. The project applicant will submit a Solar Water Management Agreement request to the SLWD for project operation. The SLWD will review the requests and determine whether sufficient supplies are available. Under Rule No. 24, the project could receive up to 10 afy. The properties' agricultural water allocation would be suspended during this agreement. This would provide adequate supply for project operation (5 afy). If the SLWD issues a Water Management Agreement for the project, sufficient water supplies would be available to serve the project's operational water demand.

Under the well option, the 5 af per year operational water demand is less than 0.003 of the total groundwater inflow, 0.005 percent of the annual average groundwater pumping volume, and 0.019 percent of the annual overdraft in the GSP area. This volume represents such a small proportion of the average groundwater inflow, average annual pumping, and projected overdraft that the project's effects on groundwater volumes and groundwater sustainability within the Delta-Mendota Subbasin are considered to be minimal. In addition, during use of the Mid-Cal well to supply water for the Project, irrigation would not be curtailed or reduced in any way, such that there will be no effect on agricultural production.

The Water Supply Assessment concludes that sufficient water supplies of the region are available to meet the projected water demand of the proposed project during operation in normal, dry and multiple dry years under either water scenario, with issuance of the required approvals (ICF 2024a). Without issuance of the approvals, the project would not proceed as proposed and subsequent CEQA review may be required. Community Plan Mitigation Measure 5.7-1 applies to

implementation plans and subdivision maps and would not apply to the solar project. Therefore, impacts from operation of the solar project would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning and site reclamation of the solar project site would begin immediately after the 35-year lifespan of the solar project, expected in 2060. Water demand for eventual decommissioning of the project in 2060 was not considered in the WSA because it is beyond the 20-year scope of the assessment. However, decommissioning typically requires a similar amount of water for dust suppression as construction. Therefore, for the reasons stated above in the construction water supply analysis, impacts from decommissioning of the solar project would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Water demand associated with the portion of the solar project site that is outside of the Community Plan boundary is included in the analysis and figures above.

Off-Site Mitigation Site

Establishment of the off-site mitigation site would include an area of grassland habitat. The habitat area would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. The off-site mitigation site would not involve placement of structures or require water supply as no construction or development-related activities are proposed for this site. Therefore, impacts from the off-site mitigation site would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The PG&E substation improvements would involve the construction of new electrical infrastructure, as is evaluated throughout this SEIR. There would be no operational water demand generated. Construction comprises the majority of the water demand. Water usage during construction would be required for soil conditioning, road maintenance, dust suppression, and miscellaneous purposes. Water demand estimates for construction of the PG&E substation improvements were considered with the project construction demand estimates described above (approximately 0.14 percent and 0.24 percent of the total groundwater inflow and annual average groundwater pumping volume, respectively, in the first year of construction). The volume required represents such a small proportion of the average groundwater inflow and average annual pumping that the project's effects on groundwater volumes and groundwater

sustainability within the Delta-Mendota Subbasin are considered to be minimal. Water for construction may be provided through SLWD water agreements or transported from the Mid-Cal well to the project site in 4,000-gallon water trucks. Sufficient water supplies are available to serve project construction during normal, dry and multiple dry years. Therefore, impacts from the PG&E substation improvements would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

The Community Plan EIR concluded that water supply impacts would be significant and unavoidable. As explained above, the off-site residential redesignation component of the project would not increase water demand beyond what was considered in the previous EIR. While the solar project and PG&E substation improvements would require modest amounts of water for construction (and in the case of the solar project, operations), the identified water sources (SLWD agreements or groundwater from the Mid-Cal well) would be different than the water sources identified for the Community Plan in the Community Plan EIR. Additionally, there is adequate groundwater at the Mid-Cal well to serve the project's demand. Thus, based on the analysis above, impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site components would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. Impacts from the off-site residential redesignation component would remain significant and unavoidable, consistent with the Community Plan EIR conclusion. Considering the project as a whole, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact UT-3: Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts to wastewater treatment capacity that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.7-4, on pages 5.7-25 through 5.7-28 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan would generate demand for wastewater treatment capacity, which cannot be met by existing wastewater treatment facilities. Community Plan EIR Mitigation Measure 5.7-4 would ensure adequate water treatment facilities are provided concurrently with proposed development. Development of a wastewater treatment plant would be required. However, the Community Plan EIR found that construction and operation of a wastewater treatment plant could result in significant and unavoidable impacts even with implementation of all feasible mitigation. Therefore, the Community Plan EIR concluded that impacts to wastewater would be significant and unavoidable.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change covering the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below. The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

Conditions at and around the redesignation area have not changed since certification of the Community Plan EIR in a way that would change this impacts analysis because existing wastewater treatment facilities have been managed and maintained in compliance with the appropriate federal and state regulations and requirements and no new treatment facilities have been constructed. The proposed off-site residential redesignation would not result in a direct increase in the demand for wastewater treatment. While the proposed off-site residential redesignation would increase the planned density within the residential redesignation area, it would not increase the overall medium-density/high-density residential capacity or associated need for wastewater treatment for the approved Community Plan. Instead, it would redistribute already approved medium-density/high-density residential capacity to a different area within the Community Plan area. Wastewater treatment and facilities were evaluated in the build out analysis of the Community Plan and would not be increased by the proposed off-site residential redesignation. In addition, the proposed project would not impede construction of the proposed water and wastewater treatment plants. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. Therefore, impacts from the off-site residential redesignation would be significant and unavoidable, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

During construction, construction workers would use portable sanitation facilities. Construction sanitation needs would be met through contract with an appropriate sanitation company to provide, clean, maintain, and remove portable toilets and sinks. Portable sanitation facilities would be placed at the main staging area and at temporary staging areas throughout the solar project site as needed. The amount of water for construction workers' needs, including water for sanitation facilities, would be minimal. Upon completion of construction, the portable sanitation facilities would be removed. No wastewater treatment or conveyance would be necessary. Community Plan Mitigation Measure 5.7-4 applies to subdivision maps and would not apply to the solar project. Therefore, impacts from construction of the solar project would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

The solar project would not require connections to a municipal wastewater treatment system and no wastewater treatment or conveyance would be necessary. No permanent or temporary toilets would be installed. Community Plan Mitigation Measure 5.7-4 applies to subdivision maps and would not apply to the solar project. Therefore, impacts from operation of the solar project would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning and site reclamation of the solar project site would begin immediately after the 35-year lifespan of the solar project, expected in 2060. Decommissioning impacts are expected to be similar to those during construction. Sanitation needs would be met through contract with an appropriate sanitation company to provide, clean, maintain, and remove portable toilets and sinks. Decommissioning would not involve the demand for wastewater treatment or conveyance. Therefore, impacts from decommissioning of the solar project would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Wastewater impacts associated with the portion of the solar project site that is outside of the Community Plan boundary are included in the analysis above.

Off-Site Mitigation Site

Establishment of the off-site mitigation site would include an area of grassland habitat. The habitat area would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. No wastewater treatment or conveyance would be required. The Off-Site Mitigation Site would not require connections to a municipal wastewater treatment system. Therefore, impacts from the off-site mitigation site would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The PG&E substation improvements involve the installation of new equipment within the existing PG&E substation. The PG&E substation improvements would not generate wastewater and no wastewater treatment or conveyance would be required. Therefore, impacts from the PG&E substation improvements would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site components would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. Impacts from the off-site residential redesignation component would remain significant and unavoidable, consistent with the Community Plan EIR conclusion. Considering the project as a whole, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact UT-4: 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? (New or substantially more severe significant impacts would result beyond those identified in the previous EIR; no feasible mitigation is available.)

Impact UT-5: Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts to solid waste that could result from buildout of the Community Plan. Refer to the discussion under Impacts 5.7-7 and 5.7-8, on pages 5.7-33—5.7-35 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan would substantially increase solid waste generation. The County would need to construct additional landfill facilities to meet demands. Expansion of County landfill facilities could result in significant and unavoidable impacts even with implementation of all feasible mitigation. Mitigation of these impacts would be the responsibility of Merced County. No other feasible mitigation could be implemented by the proposed project. Therefore, the Community Plan EIR concluded that impacts related to solid waste would be significant and unavoidable.

Conditions in the project area have changed since certification of the Community Plan EIR. At that time, the County's total remaining landfill capacity was 35,600,000 cubic yards, including 600,000 cubic yards at the Billy Wright Landfill and 35,000,000 cubic yards at the Highway 59 Landfill (Community Plan EIR page 5.7-4). In 2010, the Billy Wright Landfill was expanded, increasing the landfill's remaining capacity to 11,370,000 cubic yards (CalRecycle 2022a). When combined with the Highway 59 Landfill's current remaining capacity of 28,025,334 cubic yards, the County now has a total remaining landfill capacity of 39,395,334 cubic yards (approximately 3.8 million more cubic yards more than what was studied in the Community Plan EIR). At the time the Community Plan EIR was prepared, a draft EIR for the 2010 Billy Wright Landfill expansion project was available (SCH # 2003101096). The draft EIR, which is incorporated by reference, identified significant and unavoidable impacts on the environment, and was the basis for the Community Plan EIR's conclusion that expansion of County landfill facilities could result in significant and unavoidable impacts even with implementation of all feasible mitigation.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated zone change covering the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; communication equipment, electrical distribution/transmission, and substation uses; public utility facilities; and additional ancillary buildings, fencing, roads, and equipment. The on-site redesignations and Zone Change and establishment of the solar overlay would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below. The solar project would also require an off-site amendment to the General Plan and Community Plan to re-designate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

The proposed off-site residential redesignation would not result in the direct increase in solid waste. While the proposed off-site residential redesignation would increase the planned density within the residential redesignation area, it would not change the overall medium-density/high-density residential capacity and associated generation of solid waste of the approved Community Plan. Instead, it would redistribute already approved medium-density/high-density residential capacity to a different area within the Community Plan area. Solid waste generation was evaluated in the build out analysis of the Community Plan and would not increase with the proposed off-site residential redesignation. Future development within the off-site residential redesignation area would be subject to the policies in the Community Plan and the mitigation measures in the Community Plan EIR. Furthermore, with the expansion of the Billy Wright Landfill in 2010, the County has approximately 3.8 million cubic yards of additional remaining landfill capacity compared to what was studied in the Community Plan EIR. Therefore, impacts from the off-site residential redesignation would be significant and unavoidable, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

Solar project construction would require construction materials such as concrete, aggregate, wood, metal, and fuel. Solid waste generated during construction would include debris such as concrete, wood, brick, glass, plastics, scrap metal, and incidental refuse generated by the construction crew. Construction waste would be sorted to separate recyclable and nonrecyclable materials. Waste would be stored in dumpsters that would be serviced by a licensed solid waste hauler in the County. Construction waste generation is expected to be minimal because no demolition is needed, and because CALGreen requires 65 percent diversion of waste from construction and demolition projects through recycling and/or salvage. Non-hazardous construction debris that cannot be reused or recycled would be disposed of in local landfills in accordance with applicable regulations. The Billy Wright Landfill and Highway 59 Landfill are both permitted to receive 1,500 tons of waste per day. The Billy Wright Landfill has a remaining capacity of approximately 11,370,000 cubic yards and is expected to reach its permitted capacity in 2054 (CalRecycle 2022a) and Highway 59 Landfill has remaining capacity of 28,025,334 cubic yards and is expected to reach its permitted capacity by 2030. These landfills would have sufficient capacity to accept anticipated project-generated waste. Therefore, construction of the solar 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. Project construction would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. Project-specific construction impacts would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

Operation and maintenance activities would generate waste that could include broken or rusted metal, defective or malfunctioning equipment, electrical materials, empty containers, other miscellaneous solid waste, and typical refuse from operations and maintenance staff. There would be up to eight maintenance and inspection personnel visiting the solar project site daily to service and maintain the arrays. Using standard generation rates from CalRecycle, for industrial uses, it is estimated that the Project operations would generate up to approximately 71 pounds of waste per day, or 26,075 pounds or 13 tons of waste per year (CalRecycle 2022c).³ This equates to approximately 455 tons of operational waste over the 35-year lifespan of the solar project.

Waste disposal during the operation period would be consistent with applicable federal, state, and local recycling, reduction, and waste requirements and policies. Over the 35-year operational period, waste would be disposed of at the Billy Wright Landfill (with permitted capacity expected to be reached in 2054) and the Highway 59 Landfill site (with permitted capacity expected to be reached in 2030). These landfills would have sufficient capacity to accept anticipated project-generated waste since both landfills are permitted to receive 1,500 tons of waste per day each. The project's operational waste generation would be negligible compared to the permitted capacity of the landfills that serve the solar project area. Operation of the solar 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. Project operation would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. However, both landfills are expected to close prior to the project's decommissioning date in 2060. No other landfills with disposal capacity beyond 2054 have been identified in Merced County. Counties are required, under the California Integrated Waste Management Act, to prepare a Countywide Integrated Waste Management Plan that demonstrates sufficient capacity is available to serve all jurisdictions in the County. To comply with the California Integrated Waste Management Act, discussed in the Regulatory Setting above, Merced County would be required to continue to demonstrate, over a five-year reporting cycle, it has at least 15 years of remaining landfill capacity available in the County. Given this requirement as part of long-term strategic planning efforts, it is expected that additional landfill or other solid waste disposal capacities would be identified to address disposal demand following closure of these landfills and that the Project would utilize available capacity in regional landfills or other available solid waste facilities between 2054-2060. Nonetheless, because landfill capacity in the County has not been identified beyond 2054 and the project would operate until 2060, it is conservatively concluded that, as disclosed in the Community Plan EIR, operational impacts would be significant and unavoidable.

³ Based on a waste generation rate of 8.93 pound/employee/day for "Industrial sector" uses. CalRecycle does not provide waste generation rates for solar projects; therefore, the closest available rate for "industrial" was applied. Because the proposed project is a solar energy generation and storage facility and would have few employees regularly on-site, operation of the proposed project would generate a small amount of solid waste. Therefore, this rate likely overestimates the solar project's operational waste generation.

The significant and unavoidable impact disclosed in the Community Plan EIR was based on the significant impacts that would result from the then-proposed expansion of the Billy Wright Landfill, which has since been constructed. The significant impact associated with the solar project is a result of the additional operational waste generated by the solar project between 2054-2060, which would require even more landfill capacity than what has already been constructed, since the Billy Wright Landfill is expected to reach full capacity by 2054. The construction of additional or further expansion of existing landfill facilities could result in significant and unavoidable impacts on the environment (e.g., impacts related to air quality and possibly impacts on other resources depending on the option chosen). The impact would be more severe than the significant and unavoidable impact identified in the Community Plan EIR because of the additional solid waste that would be generated by solar project operation. Because specific projects have not yet been identified and studied, it is not possible to identify feasible mitigation. Therefore, ***a new or substantially more severe significant impact would result beyond those identified in the previous EIR, and feasible mitigation is not available.***

Decommissioning

Decommissioning and site reclamation of the solar project site would begin immediately after the 35-year lifespan of the solar project, expected in 2060. As described in the Las Camas Decommissioning and Reclamation Plan, approximately 61,160 tons of material would be removed from the solar project site during decommissioning (Appendix 2-1). The waste generated during decommissioning and site reclamation would be primarily non-hazardous and would be recycled. Anticipated solid waste would include concrete, metal, plastics, PV panels, and lithium-ion batteries. Recyclable materials, including PV panels and the lithium-ion batteries, would be removed from the waste stream and recycled prior to disposal of solid waste in an approved landfill. The PV panels would be required to be recycled with a universal waste handler that accepts PV solar panels. According to the California Department of Toxic Substances Control (DTSC), the nearest universal waste handler to the solar project site is in Fresno County at Electronic Recyclers International, 3243 S. East Avenue, #108, Fresno, CA (DTSC 2023). Other components of solar project decommissioning 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. Project decommissioning would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Decommissioning of the Project would occur after the Billy Wright and Highway 59 Landfills have reached their permitted capacities in 2054 and 2031, respectively (CalRecycle 2022b). Because the County has not identified future landfills to accept waste beyond 2054, it is unknown where decommissioning waste will be disposed. Counties are required, under the California Integrated Waste Management Act, to prepare a Countywide Integrated Waste Management Plan that demonstrates sufficient capacity is available to serve all jurisdictions in the County. To comply with the California Integrated Waste Management Act, discussed in the Regulatory Setting above, Merced County would be required to continue to demonstrate, over a five-year reporting cycle, it has at least 15 years of remaining landfill capacity available in the County. Given this requirement as part of long-term strategic planning efforts, it is expected that additional landfill or other solid waste disposal capacities would be identified to address disposal demand following closure of these landfills. The Project would utilize available capacity in regional landfills or other available solid waste facilities when decommissioning occurs.

Waste disposal demand associated with decommissioning of the project would not, on its own, require construction of new solid waste disposal facilities. Some or all of the components removed during decommissioning activities (e.g., aluminum, steel components, and batteries) would be salvaged and/or recycled, as feasible. Components not able to be salvaged would be removed and disposed of in accordance with the laws and regulations in effect at the time of decommissioning. Waste disposed to landfills during project decommissioning would be distributed to open landfills with sufficient capacity to accommodate such waste.

Similar to the operational impacts discussion, because landfill capacity in the County has not been identified beyond 2054 and project decommissioning would occur in 2060, it is conservatively concluded that, as disclosed in the Community Plan EIR, impacts would remain significant and unavoidable. The significant and unavoidable impact would be more severe due to the additional solid waste generated by solar project decommissioning. Therefore, ***a new or substantially more severe significant impact would result beyond those identified in the previous EIR, and feasible mitigation is not available.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Waste generation impacts associated with the portion of the solar project site that is outside of the Community Plan boundary are included in the analysis above.

Off-Site Mitigation Site

Establishment of the off-site mitigation site would include an area of grassland habitat. The habitat area would be placed into a conservation easement in perpetuity and managed for the benefit of the San Joaquin kit fox and other listed species, as necessary. No construction would occur at the off-site mitigation site and no operational activity would occur that is anticipated to generate solid waste. For example, livestock grazing would be used to maintain the grassland, and mowed grass would be left onsite to decompose. Therefore, no solid waste would be generated, and no impact would occur from the off-site mitigation site. The significant and unavoidable impact identified in the Community Plan EIR would not be exceeded. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

During construction, the PG&E substation improvements would involve the transport of general construction materials (e.g., concrete, aggregate, wood, metal, and fuel), as well as the materials necessary to construct the improvements. Solid waste generated during construction would include debris such as concrete, wood, brick, glass, plastics, scrap metal, and similar material. Construction waste that is generated at the substation would be sorted to separate recyclable and nonrecyclable materials. Such waste would be stored in dumpsters that would be serviced by a licensed solid waste hauler in the County. Non-hazardous construction debris generated would be disposed of in local landfills in accordance with applicable regulations. PG&E would be required to comply with the CALGreen Code, which requires 65 percent construction waste diversion. Compliance to the CALGreen Code requires contractors to develop and maintain a waste management plan and document diversion and disposal or utilize a waste management company that can provide verifiable documentation that it meets 65 percent waste diversion (CALGreen 2020). Operation and maintenance of the PG&E Improvements is not expected to generate additional solid waste beyond existing levels. The exact quantity of solid waste that would be generated from construction of the PG&E Improvements is

unknown. Landfill waste generated by the PG&E substation improvements would not exceed the Billy Wright Landfill or Highway 59 Landfill's permitted daily tonnage nor substantially deplete long-term capacity. Therefore, impacts from the PG&E substation improvements would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Based on the analysis above, impacts from the off-site residential redesignation, solar project construction, PG&E substation improvements, and off-site mitigation site components would be less than significant and would not exceed the significant and unavoidable impacts identified in the Community Plan EIR. However, impacts from operation and decommissioning of the solar project would result in a significant and unavoidable impact that would be more severe than the significant and unavoidable impact identified in the Community Plan EIR. Therefore, when considering the project as a whole, ***a new significant impact would result beyond those identified in the previous EIR, and feasible mitigation is not available.***

3.19.3 References Cited

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3.20 Wildfire

This section identifies and evaluates the project’s potential impacts related to wildfire, including impairment of an adopted emergency response plan or evacuation plan, exacerbation of wildfire risks due to secondary wildfire impacts (e.g., landslides or floods), and installation or maintenance of associated infrastructure that may exacerbate wildfire risk. This section also describes existing conditions in the project area and the regulatory framework for this analysis. As discussed in Chapter 2, *Project Description*, of this subsequent environmental impact report (SEIR), the proposed project consists of constructing the solar project, including the generation tie line (gen-tie line); constructing the Pacific Gas and Electric Company (PG&E) substation improvements; adopting on- and off-site Merced County General Plan (General Plan), Community Plan, and Zoning amendments; and establishing the off-site mitigation site. Potential impacts associated with the solar project, PG&E substation improvements, and off-site mitigation site are analyzed at a project level; potential impacts associated with the off-site General Plan amendment are analyzed at a program level. Feasible mitigation measures, where applicable, are also described.

Issues identified in response to the notice of preparation (NOP) (Appendix 1-2) were considered in preparing this analysis. No questions or concerns related to wildfire were raised in response to the NOP.

Pursuant to Public Resources Code Section 21061 and California Environmental Quality Act (CEQA) Guidelines Section 15150, this analysis incorporates by reference information in the *2030 Merced County General Plan Update EIR* (General Plan EIR) and the *Villages of Laguna San Luis Community Plan EIR* (Community Plan EIR). Where information is incorporated by reference, that information is briefly described or summarized (CEQA Guidelines Section 15150[c]). Refer to Chapter 1, *Introduction and Scope of Environmental Impact Report*, of this SEIR for the location where the General Plan EIR and Community Plan EIR are available for public inspection.

3.20.1 Existing Conditions

Environmental Setting

Regional Setting

Wildfire

The term “wildfire” refers to an unplanned, unwanted wildland fire, including unauthorized human-caused fires, escaped wildland fire-use events, escaped prescribed fire projects, and all wildland fires where the objective is to extinguish the fire (California Government Code Section 51177). Wildfire characteristics depend on the circumstances where the fire is burning. Brush fires, which burn both natural vegetation and dry-farmed grain, typically burn fast and very hot; they often threaten homes in an area and lead to serious destruction of vegetation. Woodland fires are relatively cool under natural conditions; however, if a brush fire spreads to a woodland, it could generate a destructive hot-crown fire. Currently, no suitable management technique of reasonable cost has been devised to reduce the risk of these fires. However, such fires can typically be controlled relatively quickly and easily if they are reachable by fire equipment.

The short-term effects of wildfires include the destruction of timber or agricultural resources and the loss of wildlife habitat, scenic vistas, and watersheds, along with immediate impacts on human health (e.g., wheezing, coughing, sore eyes and throat, shortness of breath), including loss of life or injury (U.S. Environmental Protection Agency 2022). Long-term effects of wildfires include smaller timber harvests, reduced access to recreational areas, and destruction of community infrastructure and cultural or economic resources. Wildfires also increase the area's vulnerability to secondary impacts such as flooding, landslides, and increased runoff. Wildfire damage to life and property is generally greatest in areas designated as a wildland-urban interface where development is in proximity to densely vegetated areas.

Fire hazards pose a considerable risk to people, vegetation, and wildlife habitats throughout Merced County. Numerous areas throughout the county are composed of natural vegetation that is extremely flammable during dry seasons (i.e., early spring to late fall). Merced County has a long-standing history of small and large fires across the county. Although there have not been any state or federal state disaster declarations in the county as a result of wildfire, the county experiences an average of one wildfire every 1.5 years, at an average of 1,500 acres burned per year. The largest fire in the county occurred in 1996, the Mercy Fire, when approximately 19,131 acres were burned. Most recently, a portion of the county, approximately 3,800 acres, was burned as a result of the SCU Lightning Complex Fire, which became one of the largest fires in California's state history (County of Merced [County] 2021). However, fuel loads in the county, along with geographical features, natural weather conditions (e.g., periods of drought accompanied with extreme high temperatures), and wind, can result in frequent and catastrophic fires. As development within the county continues to grow and expand, and the wildland-urban interface grows, the risk and opportunity for wildfires to ignite will also increase. In addition, climate change is expected to contribute to significant changes in fire regimes. Fire is a natural component of many ecosystems and natural community types, including grasslands. For each of these natural communities, fire frequency and intensity influence community regeneration, composition, and extent. It is highly likely that wildfire frequency, size, and intensity will increase over time throughout the county as a result of climate change (County 2012).

As explained below in the *Regulatory Setting*, the California Department of Forestry and Fire Protection (CAL FIRE) identifies State Responsibility Areas (SRAs) and Local Responsibility Areas (LRAs), which are areas in which the state or local fire agencies, respectively, are responsible for fire management. However, because wildfires can rapidly spread across responsibility areas, local and state firefighting groups often work collaboratively to contract wildland fires and fires within the urban-wildfire interface. Land areas identified as SRAs and LRAs are divided into Fire Hazard Severity Zones (FHSZs), which include areas of Moderate, High, and Very High fire hazard risk.

A large portion of the county is within SRAs, which are served by CAL FIRE. The areas within the county that are in LRAs are served primarily by the Merced County Fire Department. According to CAL FIRE's Fire Resource Assessment Program (FRAP), there are no areas within the county that are designated as Very High FHSZs (CAL FIRE 2007 and 2008). However, there are areas, primarily west of Interstate (I) 5, that are designated as Moderate or High FHSZs. In total, approximately 17,364 residents currently reside within an FHSZ (County 2021). The agencies with responsibility for wildfire or fire prevention in the SRAs or LRAs, as well as FHSZs, are identified for each of the project components in the subsections below.

Emergency Response

The Merced County Office of Emergency Services (OES) provides emergency management services throughout the county, in coordination with local cities, special districts, and fire and law enforcement. The OES prepares emergency and contingency plans including, but not limited to, the emergency operations plan (described below in *Regulatory Setting*), and provides resources necessary for first responders to protect the community in the event of an emergency, such as wildland fires. In addition, OES coordinates with partner agencies, including those from the county's six incorporated cities, among other local agencies, in providing proactive planning, response, recovery, and mitigation activities as a result of a natural disaster or human-caused event (County n.d.). The OES operates the Emergency Operation Center (EOC) in Atwater at 3500 North Apron Avenue. The EOC provides overall coordination of county resources, staff, and public information.

Solar Project Site

The solar project site is located on approximately 1,741 acres of land in the western portion of the county at the southwest corner of the intersection of State Route (SR) 33/SR 152 and I-5; the site can be accessed via Billy Wright Road. The majority of the solar project site is fallowed agricultural land that has been abandoned, becoming non-native annual grassland. Portions of the solar project site are currently used for grazing and dry farming. The topography of the solar project site is mostly flat or gently rolling (i.e., an average slope of approximately 4.9 percent).

As depicted in Figure 3.20-1, according to CAL FIRE, the solar project site is within a Moderate FHSZ and under the jurisdiction of an SRA; it is also in proximity to several High FHSZs. The nearest Very High FHSZ is approximately 13 miles northwest of the solar project site and west of the San Luis Reservoir (CAL FIRE 2022). Because the solar project site is within an SRA, fire protection is provided by CAL FIRE. The closest CAL FIRE station to the project area is Station 73 at 31011 West Gonzaga Road. Located at the base of O'Neill Forebay, the station is approximately 3.1 miles west of the solar project site. Station 71, located at 525 H Street in Los Banos, approximately 8 miles east of the solar project site, would also respond in the event of a fire (County 2007). These two stations are part of CAL FIRE's Madera-Mariposa-Merced Unit.

PG&E Substation

The existing PG&E Los Banos Substation is located approximately 0.2 mile west of the solar project site. The PG&E substation is located on approximately 37 acres of land south of SR 152 and accessible via Jasper Sears Road.

Similar to the solar project site, and as depicted in Figure 3.20-1, the PG&E substation is located within a Moderate FHSZ and under the jurisdiction of an SRA. The PG&E substation is served by the same CAL FIRE stations (Stations 71 and 73) as the solar project site.

Off-Site Mitigation Site

The off-site mitigation site is located 5 miles south of the solar project site in an area of approximately 1,489 acres of undeveloped grassland. The off-site mitigation site is located immediately south of the Los Banos Reservoir.

The off-site mitigation site is located predominantly within a Moderate FHSZ; however, a small portion of the site along the western boundary is designated as a High FHSZ. The off-site mitigation site is also close to other High FHSZs, which are located primarily along the shoreline of Los Banos Reservoir. The off-site mitigation site is in an SRA and served by CAL FIRE Stations 71 and 73.

Off-Site Residential Redesignation Area

The off-site residential redesignation area is an area of approximately 202.8 acres located adjacent to the solar project site, within the Villages at Laguna San Luis Community Plan area and adjacent to the western and eastern portions of the Billy Wright landfill. As described in Chapter 3 of the Community Plan EIR on page 3-1, and incorporated by reference, the off-site residential redesignation area is used primarily for active and fallowed agricultural production (e.g., alfalfa, hay, oats, vineyards, orchards) and cattle and sheep grazing. This discussion accurately describes the current existing setting at the residential redesignation area, which has not changed appreciably since adoption of the Community Plan EIR.

Similar to the solar project site, the off-site residential redesignation area is located within a Moderate FHSZ. However, portions of the redesignation area are immediately adjacent to High FHSZs. The off-site residential redesignation area is in an SRA and served by CAL FIRE Stations 71 and 73.

Regulatory Setting

Federal

Disaster Mitigation Act of 2000

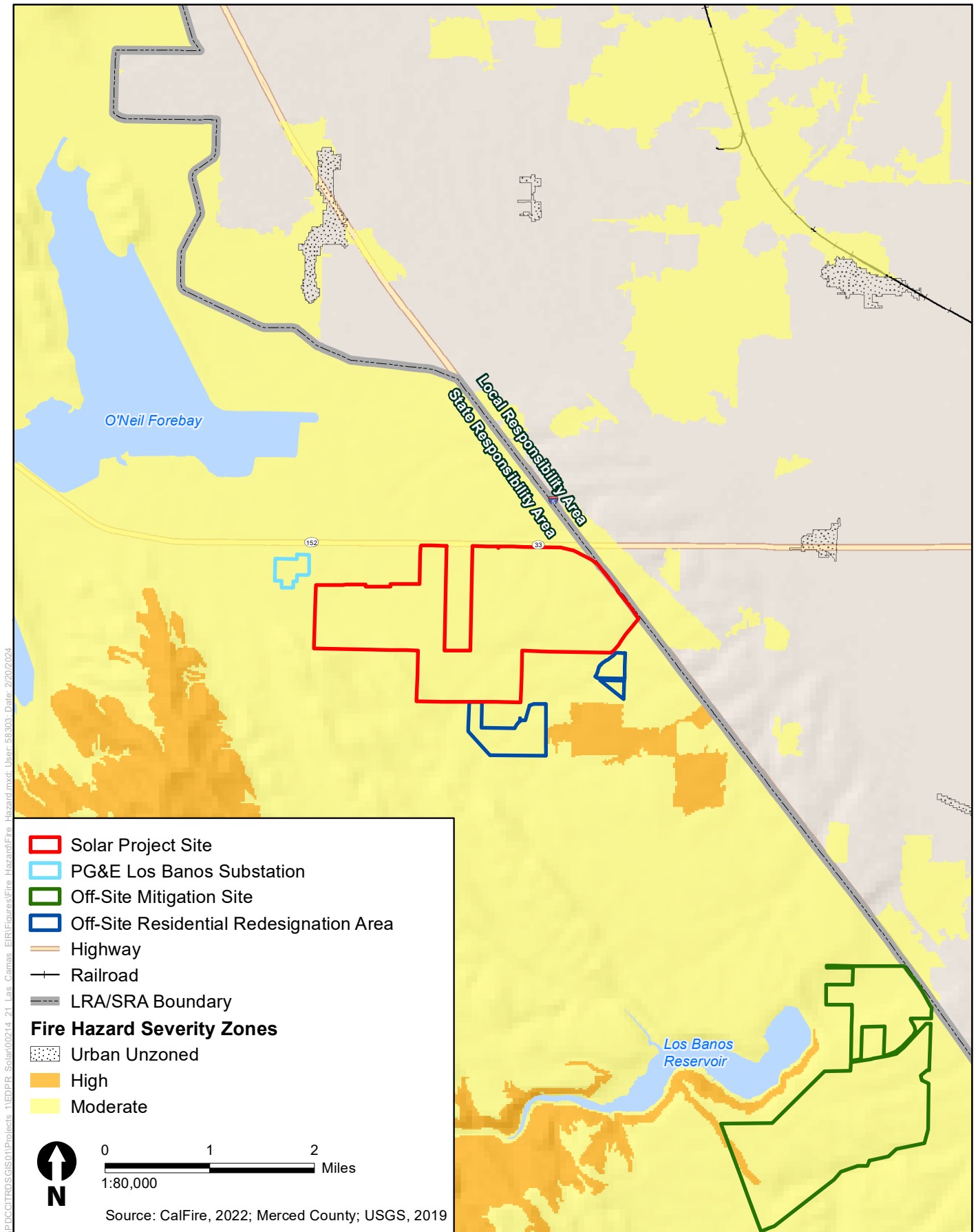
The Disaster Mitigation Act of 2000 provides the legal basis for the Federal Emergency Management Agency's mitigation planning requirements for state, local, and tribal governments as a precursor to mitigation grant assistance. The Disaster Mitigation Act of 2000 requires local governments to prepare a Local Hazard Mitigation Plan, which must be reviewed by the State Mitigation Officer, approved by the Federal Emergency Management Agency, and renewed every 5 years. The plan must include a planning process, a risk assessment process, a mitigation strategy, and plan maintenance and updating procedures to identify the natural hazards, risks, and vulnerabilities of the area under the jurisdiction of the government. Natural hazards include earthquakes, tsunamis, tornadoes, hurricanes, floods, and wildfires.

State

2019 California Strategic Fire Plan

CAL FIRE's Strategic Fire Plan provides an overall vision for a built and natural environment that is more fire resilient through the coordination and partnerships of local, state, federal, tribal, and private entities (CAL FIRE 2019). First developed in the 1930s, the Strategic Fire Plan is periodically updated; the current plan was prepared in 2019. The plan analyzes and addresses the effects of climate change, overly dense forests, prolonged drought, tree mortality, and increased severity of wildland fires through goals and strategies. The following goal and objectives of the 2019 Strategic Fire Plan are applicable to the project:

- **Goal 1:** Improve our core capabilities
 - **Objective 2:** Evaluate and improve existing emergency response capabilities.
 - **Objective 3:** Expand forestry and fire prevention through effective natural resource management programs, education, inspections, and land use planning.



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**Figure 3.20-1
Fire Hazard Severity Zones**

- **Goal 2: Enhance Internal Operations**
 - **Objective 3:** Review and update communication processes to all external stakeholders.
- **Goal 3: Ensure health and safety**
 - **Objective 2:** Promote the safety of Department employees, partners, and the public.

State Responsibility Areas (Public Resources Code 4102)

SRAs are defined by Public Resources Code Section 4102 as areas of the state in which CAL FIRE has determined that the financial responsibility for preventing and suppressing fires lies with the State of California. SRAs are lands in California where CAL FIRE has legal and financial responsibility for wildfire protection. SRA lands typically are unincorporated areas of a county, are not federally owned, have wildland vegetation cover, have housing densities lower than three units per acre, and have watershed or range/forage value. Where SRAs contain built environment or development, the local government agency assumes responsibility for fire protection.

LRAs include lands that do not meet criteria for SRAs or federal responsibility areas. Also included are lands in cities, cultivated agricultural lands, and nonflammable areas in the unincorporated parts of a county. LRAs can include flammable vegetation and wildland-urban interface areas. LRA fire protection is provided by the local fire departments, fire protection districts, or county fire departments or by contract with CAL FIRE.

Pole Clearance and Line Clearance (Public Resources Code Sections 4292 and 4293)

In accordance with Public Resources Code Sections 4292 and 4293, any electrical transmission or distribution line located on mountainous land, forest-covered land, brush-covered land, or grass-covered land is required to have a maintained firebreak, consisting of no less than 10 feet of cleared land in each direction from any pole or tower that supports a switch, fuse, transformer, lightning arrester, line junction, or dead-end or corner pole. Similarly, for any line operating at 2,400 volts or more but less than 72,000 volts, vegetation clearance of 4 feet is required; for any line operating at 72,000 volts or more but less than 110,000 volts, vegetation clearance of 6 feet is required; and for any line operating at 110,000 volts or more, vegetation clearance of 10 feet is required. Further, any dead, rotten, or dying trees or portions of trees that are leaning toward a line are required to be felled, cut, or timed to remove such hazards.

Very High Fire Hazard Severity Zones (Government Code 51177)

Very High FHSZs are defined by Government Code Section 51177 as CAL FIRE–designated areas with the highest probability for wildfire. Designations for these zones are based on consistent statewide criteria and the severity of fire hazard expected. The designation of Very High FHSZ is also based on fuel loading, slope, fire weather, and other factors, such as wind, which have been identified by CAL FIRE as major causes for the spread of wildfire. FHSZ maps are produced and maintained for each county.

Senate Bill 1241

In 2012, Senate Bill (SB) 1241 added Section 66474.02 to Title 7, Division 2, of the California Government Code, commonly known as the Subdivision Map Act. The statute prohibits subdivision of parcels that are designated as Very High FHSZs or located in an SRA unless certain findings are made prior to approval of the tentative map. The statute requires a city or county planning commission to make three new findings regarding fire hazard safety before approving a

subdivision proposal: (1) the design and location of the subdivision and its lots must be consistent with defensible space regulations found in Public Resources Code Sections 4290–4291, (2) structural fire protection services must be available for the subdivision through a publicly funded entity, and (3) ingress and egress road standards for fire equipment must be met, according to the applicable local ordinance and Public Resources Code Section 4290.

Senate Bill 901

In September 2018, SB 901 was adopted. It requires publicly owned utilities to prepare wildfire mitigation measures if the utilities' overhead electrical lines and equipment are located in an area that has a significant risk of wildfire resulting from the electrical lines and equipment. Before January 1, 2020, and annually thereafter, utility companies are required to prepare a Wildfire Mitigation Plan (WMP), except where a governing board determines that its federally approved fire prevention plan meets the otherwise applicable requirements. The WMP must include a description of preventative strategies and programs, plans for vegetation management, plans for inspections, and description of metrics to evaluate plan performance, among many other measures.

California Building Code and Fire Code

The California Code of Regulations, Title 24, is a compilation of building standards, including fire safety standards for residential and commercial buildings. The California Building Code standards serve as the basis for the design and construction of buildings in California; the California Fire Code is a component of the California Building Code. Typical fire safety requirements of the California Fire Code include the installation of sprinklers in buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas. The California Fire Code applies to all occupancies in California, except where more stringent standards have been adopted by local agencies.

California's Wildfire and Forest Resilience Action Plan

The California Forest Management Task Force was created in 2018 to introduce a more holistic approach to forest management. California's Wildfire and Forest Resilience Action Plan, a comprehensive strategy of the Governor's Forest Management Task Force, was released in January 2021 in response to the 2020 fire season, which broke numerous state records (e.g., the number of large fires burning simultaneously). The plan is intended to accelerate efforts to "restore the health and resilience of California forests, grasslands and natural places; improve the fire safety of our communities; and sustain the economic vitality of rural forested areas" (California Forest Management Task Force 2021). The following goals are included:

- **Goal 1:** Increase the pace and scale of forest health projects,
- **Goal 2:** Strengthen the protection of communities,
- **Goal 3:** Manage forests to achieve the state's economic and environmental goals, and
- **Goal 4:** Drive innovation and measure progress.

California Public Utilities Commission Decision 17-12-024

To improve fire safety associated with electrical utility facilities, the California Public Utilities Commission's (CPUC's) Safety and Enforcement Division adopted Decision 17-12-024, Decision Adopting Regulations to Enhance Fire Safety in the High Fire-Threat District. The decision

mandated CPUC to prepare a statewide Fire-Threat Map to identify areas with the highest risk—specifically, areas where stricter fire safety regulations should be incorporated. The Fire-Threat Map divides such areas into Tier 1 (High), Tier 2 (Elevated), and Tier 3 (Extreme) Hazard Zones.

Local

PG&E 2022 Wildfire Mitigation Plan Update

In February 2022, PG&E published its WMP in accordance with SB 901 Section 8387, which requires every publicly owned utility to prepare and present a WMP to a governing body by January 2020 and provide comprehensive revisions to the WMP every year thereafter (PG&E 2022). PG&E makes every effort to construct, maintain, and operate its grid system and equipment so as to minimize potential wildfire risk. The WMP describes PG&E's wildfire prevention strategies and programs, including vegetation management programs and inspection and maintenance programs, that PG&E is implementing to mitigate the threat of powerline-ignited wildfires. In addition, the WMP provides protocols for deactivating infrastructure in severe weather or hazard conditions, a strategy for how service will be restored in the event of a wildfire, and actions PG&E is taking to mitigate the threat of infrastructure-ignited wildfires, including a variety of plans, programs, and procedures.

Merced County Multi-Jurisdictional Hazard Mitigation Plan

The Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) serves as a guide to hazard mitigation planning to protect the property and residents of the county from the effects of hazard events, including wildfires. Hazard mitigation is the use of long- and short-term strategies to reduce the loss of life, personal injury, and property damage that can result from a disaster. It involves planning efforts, programs, and other activities that can mitigate the impacts of hazards. Chapter 5, *Mitigation Strategy*, of the current plan outlines mitigation goals and actions for hazards, including but not limited to drought, floods, and wildfires.

Madera-Mariposa-Merced Unit 2022 Unit Strategic Fire Plan

The purpose of the Madera-Mariposa-Merced Unit Strategic Fire Plan is to identify strategic goals and objectives that target the anticipation and reduction of wildfire within the boundaries of the Madera-Mariposa-Merced Unit (CAL FIRE— Madera-Mariposa-Merced Unit 2022). The plan also helps improve operational effectiveness by defining a level-of-service measurement, identifying assets at risk, and incorporating cooperative relationships between wildland fire protection providers.

The plan includes the following goals to reduce the risk of an extensive fire event:

- Collect, analyze, and prepare data to assess communities at risk and in need of fuel reduction or other projects.
- Work with grant writers and stakeholders to secure funds to implement projects.
- Utilize CAL FIRE personnel and resources in conjunction with other public and private efforts to assist with the project work on the ground.
- Increase opportunities for utilizing fuel hazard reduction burns in areas that would benefit from the re-introduction of fire to the landscape.

- Educate the public on fire prevention practices that would incorporate fire landscaping and construction to reduce their threat from wildfire along with hazardous fuel reduction projects to keep lives, homes, property, and natural resources safe from catastrophic wildfires.
- Teach homeowners the value of removing bug killed and dead and dying trees from the landscape to improve the health of the forests and ecosystem while also improving fire prevention and land clearance methodology.

Merced County Emergency Operations Plan—Basic Plan

The Merced County Emergency Operations Plan is designed to help the County plan for, respond to, and recover from a natural disaster or human-caused event (County 2017). The plan establishes the emergency management organization required to mitigate any significant emergency or disaster within the county, identifies the roles and responsibilities required to protect the health and safety of the county's residents and property, and establishes operational protocols for field response to emergencies and the recovery process.

Merced County General Plan

The *2030 Merced County General Plan*, adopted in December 2013, provides a vision for long-range physical and economic development of the county, provides strategies and specific implementing actions, and establishes a basis for judging whether specific development proposals and public projects are consistent with the County's plans and policy standards (County 2013). The County General Plan includes the following policies that are applicable to wildfire:

- **Goal PFS-7:** Provide adequate fire and emergency medical facilities and services to protect county residents from injury and loss of life, and to protect property from fire.
 - **Policy PFS-7.1:** Fire Staffing and Response Time Standards. Strive to maintain department staffing levels and response times consistent with National Fire Protection Association.
 - **Policy PFS-7.5:** Cooperative Service Agreements. Promote cooperative fire protection agreements with municipal and State and Federal forest agencies, and adjacent county fire departments to provide added fire protection on a year-round basis.
 - **Policy PFS-7.9:** Fire Safety Standard Compliance. Ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the Uniform Fire Code and other State and local ordinances.
- **Goal HS-3:** Minimize the exposure of county residents and public and private property to the effects of urban and wildland fires.
 - **Policy HS-3.5:** Vegetation Clear Zones. Encourage and maintain vegetation "clear zones" around new and existing residential structures in areas designated as having a high or extreme fire hazard and assist property owners in identifying how the clear zones should be maintained.
 - **Policy HS-3.6:** Weed Abatement. Encourage weed abatement programs throughout the county in order to promote fire safety.
 - **Policy HS-3.7:** Road Fire Buffers. Encourage fire buffers along heavily traveled roads within high and extreme hazard zones by thinning, diskings, or controlled burning. Plan parks, golf courses, utility corridors, roads, and open space areas so they can serve a secondary function as fuel breaks.

- **Policy HS-3.9:** Building Permit Review. Require all buildings and structures to be constructed to fire safety standards prescribed in the California Building Code and the Merced County Fire Prevention Ordinance. Where the minimum fire-flow water pressure is not available to satisfy fire department standards, alternate fire protection measures shall be identified and incorporated into the development.
- **Policy HS-3.10:** Emergency Equipment Access—New Development. Require safe all-weather access for fire and other emergency equipment as part of the subdivision and building permit application review process.
- **Policy HS-3.12:** Fire-Resistant Vegetation. Require that development 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.
- **Policy HS-3.13:** Uniform Fire Code. Require the Uniform Fire Code to be used as a guide for project-level fire prevention and suppression activities, including site access, water supply, fire protection systems, and the use of fire-resistant building materials.
- **Policy HS-6.1:** Development Restrictions in High Risk Areas. Prohibit development in areas that may be more severely impacted by climate change, including areas at high risk of wildfire or flooding, unless proper design mitigation is included in the project.

Villages of Laguna San Luis Community Plan

The Villages of Laguna San Luis Community Plan, adopted in September 2008, provides a long-range growth and development plan for approximately 6,200 acres located west of I-5 along SR 152 and SR 33 in western Merced County. The community plan includes policies and guidance for the establishment of a new community that can accommodate growth and market demands, all while ensuring adequate public services and facilities and compatibility with the surrounding environment. The community plan includes the following policies that are applicable to wildfire:

- **Policy 4.B.1:** Minimize hazards to development from wildland fires on adjacent lands through compliance with the California Division of Forestry State Responsibility Area (SRA) Fire Safe Regulations (Title 14, Chapter, Articles 1-5).
- **Goal 3.0:** Protection against the loss of life and/or property resulting from wildfires due to urban and rural land interface.
 - **Objective 3.A:** Road and street networks, whether public or private, that provide for safe access and unobstructed circulation for wildland fire equipment and civilian evacuation during a wildfire emergency.
 - **Policy 3.A.1:** Provide a minimum of 20-foot unobstructed traveled way for all roads, or as required by the County Fire Department and Department of Public Works Improvements Standards.
 - **Policy 3.A.10:** Provide safe and ready access to fire emergency equipment in all development.
 - **Objective 3.B:** Proper identification of roads and structures to facilitate rapid fire and other emergency vehicle response.
 - **Policy 3.B.1:** Provide road and street signs that are visible and legible from both directions of vehicle travel for a distance of at least 100 feet.

- **Policy 3.C.3:** Consider the use of sprinkler systems for buildings in areas where the County Fire Department determines alternate fire protection measures are not adequate.
- **Objective 3.D:** Reduced intensity of potential grassland wildfires and resultant damage by reduced volume, density, and combustibility of vegetation and other material.
- **Policy 3.D.1:** Install firebreaks or fire roads as determined by the County Fire Department with each phase of development and which:
 - a. Separate built-up areas from natural areas (grasslands);
 - b. Provide access for firefighting personnel and equipment; and
 - c. Include a mechanism for periodic clearing of flammable vegetation.
- **Policy 3.D.2:** Establish temporary and/or permanent fire retardant zones around subdivisions and non-residential developments to create separations between flammable grassland vegetation and urban development.
- **Goal 1.0:** Public facilities and services are provided that adequately meet the needs of the Villages CP.
 - **Objective 1.B:** A community that is adequately served by fire protection facilities and services.
 - **Policy 1.B.1:** Coordinate with the Merced County Fire Department (MCFD) to ensure that adequate fire protection facilities are provided to meet the needs of the Villages CP as development occurs.
 - **Policy 1.B.6:** All roadways shall be designed to satisfy the emergency access provisions outlined in Section 4.3.2.11, *Fire Safety*.

3.20.2 Environmental Impacts

This section describes the proposed project’s potential impacts related to wildfire. It explains the methods used to determine the impacts of the project, lists the thresholds used to conclude whether an impact would be significant, and provides measures to mitigate significant impacts where necessary.

Methods for Analysis

This section describes the methods for assessing the impacts of implementing the project. Criteria from Appendix G of the CEQA Guidelines were used to determine whether the project would have a significant impact related to wildfire. The assessment of impacts related to wildfire was based on a review of applicable documents, such as the County General Plan and General Plan EIR as well as other local planning documents.

Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would be considered to have a significant effect if it would result in any of the conditions listed below.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

- Substantially impair an adopted emergency response plan or emergency evacuation plan?

- 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?
- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, powerlines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment?
- 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?

Impacts and Mitigation Measures

Impact WF-1: Substantially impair an adopted emergency response plan or emergency evacuation plan? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts on emergency response and access that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.14-12 on pages 5.14-94 and 5.14-95 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan could partially obstruct roadways in the project vicinity, which could block or slow emergency response vehicles traveling to the Community Plan area and adversely affect the response times of emergency response agencies, depending on the time of day (e.g., peak hours). This would be a potentially significant impact. However, the Community Plan EIR found that, with implementation of Mitigation Measure 5.14-12, Impacts to Emergency Vehicle Access, and policies of the Community Plan (Circulation, Objective 1.B, Policy 1.B.6), adequate emergency access would be provided, and the impact would be less than significant. Conditions have not changed since certification of the Community Plan EIR in a manner that would change its conclusions, since no development has occurred since certification of the Community Plan EIR, and there has not been material development or changes to emergency access to the Community Plan area.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

The solar project would require amendments to the General Plan and Community Plan and an associated Zone Change for the solar project site to create a Utility-Scale Solar Overlay. The overlay would allow for the development of energy generation facilities; installation of communication equipment, electrical distribution/transmission infrastructure, and substation equipment; development of public utility facilities; and construction of ancillary buildings, fencing, roads, and equipment. The on-site redesignations and zone change, as well as establishment of the solar overlay, would facilitate development of the solar project. The potential environmental impacts that could result from construction and operation of the solar project are evaluated below.

The solar project would also require an off-site amendment to the General Plan and Community Plan to redesignate roughly 202.8 acres south of the solar project site from low-density residential use to high-density/medium-density residential use.

As described in Chapter 2, *Project Description*, the project's proposed amendment would redistribute the housing that was planned under the community plan, thereby preserving the overall supply of residential units that could be developed during the life span of the solar project (i.e., 35 years); that is, the proposed off-site General Plan amendment would maintain the County's overall capacity for developing new high-density/medium-density housing. However, it is important to note that the proposed project itself does not include the construction of new housing or any other type of physical development as part of the off-site General Plan amendment. Therefore, the off-site residential redesignation area would not result in direct impacts on an emergency evacuation plan or emergency response plan. Nonetheless, future development under the off-site General Plan Amendment would include the construction of new roads outside the solar project site, as planned in the Community Plan, as amended by the proposed project. Thus, access to the area could still be impeded, consistent with the above conclusions reached in the Community Plan EIR. However, future development within the off-site residential redesignation area would be subject to the policies in the community plan and the mitigation measures in the Community Plan EIR, such as Mitigation Measure 5.14-12, Impacts to Emergency Vehicle Access; Objective 1.B; and Policy 1.B.6. Therefore, the proposed off-site residential redesignation would have a less-than-significant impact on emergency response and emergency evacuation plans with implementation of Mitigation Measure 5.14-12, Impacts to Emergency Vehicle Access, and policies of the community plan (Circulation, Objective 1.B, Policy 1.B.6), consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction

The solar project would construct the Las Camas solar facility on approximately 1,741 acres of undeveloped grassland at the southwest corner of the intersection of SR 33/SR 152 and I-5. Construction of the solar project would temporarily add approximately 1,373 daily trips on surrounding roadways, primarily on SR 152 and I-5. During construction, the project would have two points of access, either via Billy Wright Road to SR 152 or via San Luis Drive to the SR 152/SR 33 interchange. If one access point were to become unavailable during an emergency, the other access point would be available. In addition, construction access roads not used with regular operational activities would remain available in the event of an emergency. Furthermore, as discussed in Section 3.17, *Transportation*, the project would implement a Construction Traffic Control Plan (CTCP) to direct construction related automobiles and trucks to the safest routes. The CTCP would reduce the potential for vehicular conflicts with emergency response plans and emergency evacuation routes. The proposed detour routes for construction trucks and automobiles would prevent left turns being made across the state highway and would avoid the need for lane closures of public roads and potential impacts on emergency access to the solar project site. Further, these trips would be temporary in nature and would be dispersed throughout the day to minimize impacts related to emergency response and emergency evacuation. Therefore, impacts from construction of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Operation

Operation of the solar project would add a total of 58 daily trips to the surrounding roadways, which would be minor in comparison to the average daily traffic of the roadways as described under Impact TRA-1 in Chapter 3.17, *Transportation*. In addition, perimeter roads and evenly

distributed interior access roads within the solar project site would conform to Merced County and California Fire Code standards, and the solar project would meet the minimum standards set forth by Public Resources Code Section 4290, Title 14, for fire protection. Further, operation of the solar project would not remove or impede any existing surrounding roadways or emergency evacuation routes. As such, additional traffic generated by operational activities would be minimal, and the existing access roads surrounding the solar project site would provide adequate emergency access to and from the site, thereby not affecting any emergency access routes or emergency operations plans, such as the Merced County EOP. Community Plan Mitigation Measure 5.14-12 applies to final maps for projects with internal roadways, and would not apply to the solar project. Therefore, impacts from operation of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Decommissioning

Decommissioning of the solar project site would require workers and trucks to remove the equipment and return the site to pre-construction conditions. The decommissioning and site reclamation plan would outline specific traffic control measures to implement during the decommissioning phase, which is expected in 2060. The measures would likely be similar to the measures in the CTCP but would consider any changes to the local or regional transportation system that would occur between project approval and 2060. Thus, with incorporation of the CTCP, the solar project would result in minimal impacts on emergency response plans or emergency evacuation plans during construction, operation, and decommissioning. Therefore, impacts from decommissioning of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Impacts to emergency access associated with the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

The project would establish the off-site mitigation site in an area of approximately 1,498 acres located south of the solar project site. No new land uses would be constructed on the off-site mitigation site; rather, the site would be placed into a conservation easement in perpetuity and the land managed for the benefit of the San Joaquin kit fox and other covered species, as necessary. Once established, operational activities at the off-site mitigation site, including livestock grazing and targeted invasive plant management activities, would require very few personnel or vehicles. As such, additional traffic generated by these activities would be limited, and the existing access roads surrounding the off-site mitigation site would provide adequate emergency access to and from the site. Maintaining existing fencing would not interfere with existing roadway access, and therefore emergency access to the mitigation site would be maintained. Further, all mitigation lands would adhere to County requirements regarding fire protection, fire breaks, and fire management. Therefore, the off-site mitigation site would not impair an adopted emergency response plan or

emergency evacuation plan, such as the Merced County EOP, and impacts would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The existing PG&E Los Banos Substation is approximately 0.2 mile west of the solar project site and accessible via Jasper Sears Road. The proposed project includes transmission system improvements to the substation to connect it to the solar project and facilitate the delivery of power from the solar project. Construction activity at the PG&E substation would temporarily add a small number of trips (up to approximately 25 daily trips) along Jasper Sears Road and at its intersection with SR 152, thereby generating a limited amount of traffic along existing roadways. Operational activities associated with the proposed improvements would be minor in nature and would not result in significant additional trips or traffic to the substation beyond existing operational activity at the substation. Existing access along Jasper Sears Road to the substation throughout construction and operational activities would be retained under the improvements, and the proposed improvements would not interfere with emergency response or emergency evacuation plans. Therefore, impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

For the reasons discussed above, the impact of the whole project, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, on adopted emergency response plans or emergency evacuation plans would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact WF-2: 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? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts related to the exposure of people or structures to wildfires that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.4-5 on pages 5.4-19 and 5.4-20 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that the development under the Community Plan could introduce people or structures to risk of loss or injury from wildfire due to the site's Moderate FHSZ designation. However, with compliance with state regulatory requirements, California's Building and Fire Code, and policies of the community plan (e.g., Land Use Concept Policy 4.B.1 and Community Design Concept Goal 3.0), impacts related to the exposure to wildfire would be minimized, and the Community Plan EIR concluded that this impact would be less than significant.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

As stated above in Impact WF-1, implementation of the off-site General Plan amendment would not directly result in the development of the housing units within the approximately 202.8-acre off-site residential redesignation area but would facilitate future development through changes to zoning controls. The off-site residential redesignation area has been designated as a Moderate FHSZ, but portions of the area are immediately adjacent to High FHSZs. Development of housing in proximity to high fire zones could expose people to increased pollutant concentrations from wildfire, as determined in the Community Plan EIR. However, current activities, such as prescribed burning and construction, undertaken by State and local agencies are expected to follow fire management goals and policies set forth by the County General Plan and the Villages at Laguna San Luis Community Plan, the requirements of OES and CAL FIRE, and all applicable fire and safety policies or regulations set forth in the *Regulatory Setting* section to minimize the risk of wildfire. Compliance with these established goals, policies, and requirements would reduce potential impacts related to wildfire risks and the pollutants associated with wildfire. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction, Operation, and Decommissioning

The solar project site is located in an existing low-density agricultural area. According to CAL FIRE, although the threat of wildland fire has been determined to be moderate, development could expose people to increased pollutant concentrations from wildfire. Construction, operation, and decommissioning activities associated with the proposed solar facility are anticipated to have minimal potential to affect wildfire risks; however, construction of the solar project, which would include the components of the solar facility and the gen-tie line described in Chapter 2, *Project Description*, would temporarily increase the wildfire risk in the project vicinity by introducing construction equipment and personnel along existing rights-of-way and private roadways. The introduction of construction personnel and equipment in shoulder areas along public and private roadways would increase the potential for unintentional ignition of roadside vegetation. However, current activities undertaken by State and local agencies, such as prescribed burning and construction, are expected to follow fire management goals and policies set forth by the County General Plan, requirements of the California Building Standards Code, and all other applicable fire and safety policies or regulations set forth in the *Regulatory Setting* section, above, to minimize risk of wildfire. Compliance with these established goals, policies, and requirements would reduce potential impacts related to wildfire risks and the pollutants associated with wildfire. In addition, all perimeter roads and evenly distributed interior access roads within the solar project site would conform to County and California Fire Code standards, and the solar project would meet the minimum standards set forth by Public Resources Code Section 4290, Title 14, for fire protection and emergency water standards. Specifically, construction, operation, and decommissioning of the gen-tie line would adhere to Public Resources Code Sections 4292 and 4293, which require a firebreak around poles and lines; this would require clearing vegetation in an area no less than 10 feet in each direction from the outer circumference of a pole, tower, or line to minimize the risk of a wildfire ignited by a gen-tie line. Lastly, the solar project site is relatively flat and would be properly maintained, which would also reduce the risk of wildfire. Therefore, the solar project would not materially exacerbate wildfire risks thereby exposing project employees or other individuals in the vicinity to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts

from construction, operation, and decommissioning of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Wildfire impacts associated with the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

As discussed in Impact WF-1, once established, operational maintenance activities at the off-site mitigation site would require very few personnel or vehicles, and all mitigation lands would adhere to County requirements regarding fire protection, fire breaks, and fire management. Therefore, establishment of the off-site mitigation site would not materially exacerbate wildfire risks thereby exposing project employees or other individuals in the vicinity to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. Impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Impacts related to the exacerbation of wildfire risks as a result of the proposed PG&E substation improvements would be similar to those described above for the solar project. Like the solar project, the existing PG&E substation would not be located on or near an area designated as a High or Very High FHSZ. The proposed improvements would be subject to the same fire management policies listed above to minimize risk of wildfire, in addition to any fire prevention mitigation or requirements provided in PG&E's 2022 WMP. In addition, the substation, as a component of the overall project site, is relatively flat and would be properly maintained to reduce the risk of wildfire further, with adequate utility and building setbacks incorporated on the site. Therefore, construction and operation of proposed PG&E substation improvements would materially exacerbate wildfire risks thereby exposing project employees or other individuals in the vicinity to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. Impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

No project component would materially exacerbate wildfire risks and expose project employees or other individuals in the vicinity to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire, including employees or other individuals associated with the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site. Therefore, when considering the whole of the project, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Impact WF-3: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, powerlines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment? (With implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.)

Impacts Identified in the Previous EIR

The Community Plan EIR evaluated the potential impacts related to the exposure of people or structures to wildfires from development of the Community Plan. As detailed in Impact WF-2, the Community Plan EIR, which is incorporated by reference, evaluated potential impacts related to the exposure of people or structures to wildfires under Impact 5.4-5 on pages 5.4-19 and 5.4-20. The Community Plan EIR found that, with compliance with state regulatory requirements, California's Building and Fire Code, and policies of the community plan (e.g., Land Use Concept Policy 4.B.1 and Community Design Concept Goal 3.0), impacts related to wildfire risk would be minimized, and the Community Plan EIR concluded that this impact would be less than significant.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

A high-density/medium-density residential use of the off-site residential redesignation area instead of a low-density residential use would not change this conclusion, as the same lands would be disturbed. As detailed above, the project does not propose any development within the off-site mitigation site and would not involve any construction or operational activities that would require the installation or maintenance of infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment. In addition, future development under the amendment would be subject to the community plan, which requires approval of implementation plans for each specific area identified under the plan. Implementation plan approval by the County is a discretionary action, and supplemental environmental review, including any identified mitigation measures related to wildfire, would be required for approval of the implementation plan (see page 1-3 of the Community Plan EIR) (County 2007). Further, any future development under the off-site General Plan Amendment would be required to comply with the State and local wildfire plans and regulations applicable at the time and would ensure that future development would not exacerbate fire risk or impacts on the environment as a result of the installation or maintenance of infrastructure, similar to the conclusions reached in the Community Plan EIR. Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction, Operation, and Decommissioning

As described in Chapter 2, *Project Description*, and Section 3.19, *Utilities and Service Systems*, the project would not require modifications to wastewater treatment, storm drainage, natural gas, or telecommunications facilities because construction, operation, and decommissioning of the solar project would not require connections to utility infrastructure. However, the proposed project would connect to the existing PG&E Los Banos Substation west of the solar project site through a 230-kilovolt (kV) transmission line (gen-tie line) and connect to the existing PG&E utility infrastructure through the installation of new localized connections to the greatest extent possible.

The solar project site is not located on or near lands that have been classified as Very High FHSZs; however, the project site is in an area with moderate to high wildfire hazards. Although construction associated with the proposed solar facility, including the gen-tie line and other project components described in Chapter 2, *Project Description*, is anticipated to have minimal potential to result in a wildfire risk with adherence to the California Building Standards Code and County requirements, construction would temporarily increase wildfire risks in the project vicinity. During construction of the solar facility, the installation of infrastructure associated with the project, including photovoltaic solar arrays, supporting electrical infrastructure, the battery energy storage system, and access roads, could increase the potential for wildfire risk by introducing construction equipment and personnel to vegetated private and public roadway shoulders in the solar project area. Similarly, the gen-tie line could increase the risk of wildfire because electrical infrastructure could ignite a wildfire if sparking occurs, powerlines are downed, or trees or vegetation comes in contact with powerlines. In addition, as described in Chapter 2, *Project Description*, during operation of the project, lithium-ion (Li-ion) batteries would be used. Li-ion batteries have flammable properties and, therefore, can pose a fire risk. Impacts associated with the use of the Li-ion batteries are described in more detail below.

Lithium-Ion Fire Risks

The primary danger of storage and use of Li-ion batteries is that they contain lithium ions and flammable electrolytes and are capable of spontaneous ignition and subsequent explosion due to overheating. Battery overheating may be caused by electrical shorting, rapid discharge, overcharging, manufacturer's defect, poor design, or mechanical damage, among other causes. Overheating results in a process called thermal runaway, which is a reaction within the battery causing internal temperature and pressure to rise at a quicker rate than can be dissipated. Once one battery cell goes into thermal runaway, it produces enough heat to cause adjacent battery cells to also go into thermal runaway. This produces a fire that repeatedly flares up as each battery cell in turn ruptures and releases its contents. The result is the release of flammable electrolytes from the battery. When faced with this type of fire, firefighters typically allow the fire suppression system to do its work and the fire to burn out rather than directly intercede; however, firefighters will stand by to ensure that any fire does not spread beyond the battery container. However, because these types of fires are unique, and typical fire suppression methods are not as effective in a Li-ion battery fire, it would be imperative for fire protection personnel to be notified of the potential for this type of fire on-site so that they can be prepared to apply appropriate firefighting tactics in the unlikely event of a fire. Further, anyone near the batteries in the event of a fire could be injured, including project employees or fire personnel responding to the project site. Therefore, a new potentially significant impact would result beyond those identified in the previous EIR and additional mitigation would be required.

As described in Chapter 2, *Project Description*, the solar project's battery facility would be operated in accordance with all applicable State and federal requirements and manufacturer safety specifications. Personnel training would be implemented as part of the solar project to help address the unique issues this type of battery technology presents, such as battery fire behavior, emergency response procedures, and fire extinguisher use (Li-ion battery focus). In order to prepare personnel for dealing with emergency situations and comply with the Occupational Safety and Health Administration's Emergency Action Plan Standard, 29 Code of Federal Regulations 1910.38, and the National Fire Protection Association's NFPA 855, Standard for the Installation of Stationary Energy Storage Systems, an emergency action plan would be developed prior to solar project operation. This emergency action plan would be developed to effectively address all

emergencies that may be reasonably expected to occur at the as a result of the Li-ion battery. Such a plan may include a designated emergency coordinator who would be responsible for notification of emergency personnel, safely evacuating solar project employees, and the proper use of fire extinguishers (if applicable). All personnel working on-site would receive instruction and training on the emergency action plan.

Although adherence to OSHA and National Fire Protection Association safety standards and implementation of an emergency action plan would reduce impacts related project infrastructure that may exacerbate fire risks or result in temporary or ongoing impacts on the environment, it would not eliminate it. Implementation of project-specific Mitigation Measures WF-3a and WF-3b would reduce impacts associated with construction, operation, and decommissioning of the proposed solar facility—specifically, impacts related to the Li-ion battery—to a less-than-significant level, consistent with the Community Plan EIR conclusion. Therefore, ***with implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Mitigation Measure WF-3a: Fit Battery Containers with a Fire Suppression System

The applicant shall design each battery container system in accordance with National Fire Protection Association safety standards, which include automatic shut-down systems for fans and windows to keep a container sealed when the fire extinguishing system is activated. The smoke detection system shall include a series of signals before the fire suppressing agent is released. An option for manual activation shall be included as part of the design. The applicant shall provide the County with proof that each container is so equipped before the County issues the first building permit for the project.

Mitigation Measure WF-3b: Implement a Fire Protection Plan

The applicant shall coordinate or, as a contract specification, require its contractors to coordinate with the Merced County Fire Department and CAL FIRE to prepare a Fire Protection Plan. The Merced County Fire Department and CAL FIRE shall review, revise if necessary, and approve the plan before construction begins. The Fire Protection Plan shall include the following measures:

- Internal-combustion engines, stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order.
- Contractor shall keep all construction sites and staging areas free of grass, brush, and other flammable materials.
- Personnel shall be trained in the practices of the fire protection plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires.
- Work crews shall have fire-extinguishing equipment on hand, as well as emergency numbers and cell phone or other means of contacting the fire department.
- Security gates shall be approved by the fire department and, as required, include the installation of a Merced County coded “Knox” key switch or “Knox” padlock, whichever is most appropriate.

- Smoking shall be prohibited while operating equipment and shall be limited to paved or graveled areas or areas cleared of all vegetation. Smoking shall be prohibited within 30 feet of any combustible material storage area (including fuels, gases, and solvents). Smoking shall be prohibited in any location during a Red-Flag Warning issued by the National Weather Service for the project area.¹
- Water tanks/supply capable of supplying the required fire flow (per California Fire Code requirements) for fire protection shall be used. Water tanks shall be continuously tended during a Red-Flag Warning issued by the National Weather Service for the project area if flammable or internal-combustion equipment is in use.
- At CAL FIRE's and/or the Merced County Fire Department's request, the applicant shall arrange for a site visit to discuss the specific characteristics of the selected battery system, describe the onsite fire suppression system employed as part of the battery system, and discuss emergency access to the project site in the event of a fire. Specifically, the location of the battery energy storage system, the types of batteries installed, and details regarding the fire suppression system installed shall be made available to fire personnel as soon as they are confirmed. The plan shall include provisions for yearly briefings of fire personnel during the length of the project's operational life.

Additional Proposed Development Outside of the Community Plan

Solar Project

Impacts from the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, powerlines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment resulting from the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

As discussed in Impact WF-1, establishment of the off-site mitigation site would place the site into a conservation easement in perpetuity, and would not involve any construction or operational activities that would require the installation or maintenance of infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts on the environment. Therefore, impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

The proposed project includes transmission system improvements at the substation to connect it to the solar project site and facilitate the delivery of power from the solar project. As part of the project, the existing substation fence would be moved outward to the south and east, on existing substation property, to accommodate the additional equipment required to support the new solar facility. The area within the modified fence would encompass an additional approximately 450,000-square-foot (10.3-acre) area of existing PG&E-owned substation property. Within this area, a new 230 kV breaker-and-a-half (BAAH) bus section and a new 230 kV enclosure would be constructed.

¹ "Red-Flag Warning" is a term used by weather forecasters to call attention to weather conditions of particular importance that may result in extreme burning conditions.

Additional utility infrastructure constructed in this area would include new power circuit breakers, air disconnect switches, voltage transformers, power and communication cables, underground fiber cables and fiber terminations, yard lighting, and a ground grid. Outside the fenced area, but also on PG&E-owned substation property, other infrastructure improvements to support connection to the solar facility would include, but not be limited to, communication cables or conduit, associated IT equipment, and meter receptacles. In addition, up to approximately 10 structures would be installed on substation property to support a new 230 kV transmission line connecting the substation facilities to the adjacent solar project.

As mentioned above, most new or modified facilities would be small in scale, would be consistent with fire risk from existing PG&E facilities, and would not result in extensive disturbance or substantial alterations involving prolonged fire risk or impacts on the environment. In addition, new construction activities, such as those related to the transmission and distribution substations, that would result in new or expanded large aboveground facilities in state responsibility areas, could be located next to high fire hazard severity areas. However, these facilities would be constructed within the footprint of existing PG&E facilities or properties where ongoing vegetation management and risk reduction activities performed in accordance with PG&E's standard avoidance and minimization measures and BMPs, such as PG&E AMM/BMP-9, Underground Electric Cable, are already being implemented, thereby limiting fire risks and impacts on the environment. Refer to Section 2.3.3 in Chapter 2, *Project Description*, for the full text of PG&E's AMM/BMPs. Furthermore, all construction activities would be required to adhere to all applicable fire and safety policies outlined in PG&E's WMP in order to reduce risk of fire and impacts on the environment from associated infrastructure. Therefore, these activities would not result in significantly increased wildfire risk or temporary or ongoing impacts on the environment. Impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

Impacts from the off-site residential redesignation, PG&E substation improvements, and off-site mitigation site components would be less than significant, consistent with the Community Plan EIR conclusion. However, because of the risk of fire posed by the solar project's Li-ion batteries, a new potentially significant impact beyond that identified in the previous EIR would result; mitigation would be required for that component of the project. Implementation of project-specific Mitigation Measures WF-3a and WF-3b would reduce this impact to a less-than-significant level, consistent with the Community Plan EIR conclusion. Consequently, when considering the whole of the project, ***with implementation of project-specific mitigation, no new or substantially more severe significant impacts would result beyond those identified in the previous EIR.***

Impact WF-4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? (No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.)

Impacts Identified in the Previous EIR

The Community Plan EIR, which is incorporated by reference, evaluated potential impacts related to the exposure of people or structures to wildfires under Impact 5.4-5 on pages 5.4-19 and 5.4-20. The Community Plan EIR found that with compliance with state regulatory requirements, California's

Building and Fire Code, and policies of the community plan (e.g., Land Use Concept Policy 4.B.1 and Community Design Concept Goal 3.0), impacts related to wildfire risk would be minimized, and the Community Plan EIR concluded that this impact would be less than significant.

Changes in Proposed Land Uses and Development from the Community Plan

Land Use Redesignations and Rezoning

A high-density/medium-density residential use of the off-site residential redesignation area instead of a low-density residential use would not change this conclusion, as the same lands would be disturbed. Implementation of the off-site General Plan amendment would not directly result in the development of the housing units within the approximately 202.8-acre off-site residential redesignation area, nor would it increase the overall amount of development beyond that contemplated by the Community Plan EIR. Instead, like the Community Plan itself, it would facilitate future development through changes to zoning controls. Projects implemented consistent with the proposed off-site General Plan amendment would involve the construction of structures for human occupancy, thereby potentially placing people and structures in an area that could be affected by secondary wildfire impacts, such as flooding or landslides. However, because the off-site residential redesignation area is immediately south of the solar project site, the topography of the redesignation site and surrounding area is relatively flat and would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of post-fire slope instability or drainage changes. In addition, in accordance with community plan requirements, any future development implemented consistent with the off-site General Plan amendment would be a discretionary action and, accordingly, would require supplemental environmental review (see page 1-3 of the Community Plan EIR) (County 2007). Therefore, impacts from the off-site residential redesignation would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Construction, Operation, and Decommissioning

The County has adopted safety restrictions for grading from the California Building Standards Code as well as General Plan policies and other regulations to control construction in landslide-prone areas in order to minimize the exposure of people and structures to risks. As discussed in more detail in Section 3.7, *Geology, Soils, and Seismicity*, and Section 3.10, *Hydrology and Water Quality*, General Plan and community plan policies require specific design requirements to minimize risk of exposure to geologic and hydrologic hazards, including flooding, landslides, runoff, and drainage changes. Furthermore, the solar project site is subject to implementation of the Merced County Multi-Jurisdictional Hazard Mitigation Plan, which includes strategies to reduce the loss of life, personal injury, and property damage that can result from disasters, including wildfire.

The topography of the solar project site and surrounding area is relatively flat; therefore, the solar project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of post-fire slope instability or drainage changes. Therefore, impacts from construction, operation, and decommissioning of the solar project would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Additional Proposed Development Outside of the Community Plan

Solar Project

Impacts associated with exposure of 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 resulting from the portion of the solar project located on the lands outside of the Community Plan are included in the analysis above.

Off-Site Mitigation Site

Refer to Impact WF-1. Because the off-site mitigation site would place the site into a conservation easement in perpetuity, the site would not include any activities that would involve the placement of people or structures that could be affected by downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes. Therefore, impacts from the off-site mitigation site would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

PG&E Substation Improvements

Impacts related to secondary wildfire effects associated with the PG&E substation improvements would be similar to those described above for the solar project. The existing substation site is relatively flat and would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of post-fire slope instability or drainage changes. In addition, the substation improvements would be subject to the same California Building Standards Code safety restrictions adopted for the purpose of minimizing the exposure of people and structures to these risks. Therefore, the PG&E substation improvements would not result in the exposure of people or structures to significant risks such as downslope or downstream flooding or landslide as a result of runoff, post-fire slope instability, or drainage changes. Impacts from the PG&E substation improvements would be less than significant, consistent with the Community Plan EIR conclusion. ***No new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Whole Project

As discussed above, none of the project components, including the off-site residential redesignation, solar project, PG&E substation improvements, and off-site mitigation site, are expected to 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. Taken together, these risks remain less than significant. Therefore, when considering the whole of the project, ***no new or substantially more severe significant impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

3.20.3 References Cited

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The California Environmental Quality Act (CEQA) requires that an environmental impact report (EIR) examine a reasonable range of feasible alternatives to the project or the project location that could substantially reduce one or more of the project's significant environmental impacts while meeting most or all of its objectives. The EIR is required to analyze the potential environmental impacts of each alternative, though not at the same level of detail as the project. However, there must be sufficient detail to be able to compare the respective merits of the alternatives. The key provisions of State CEQA Guidelines Section 15126.6 that relate to alternatives analyses are summarized below.

- The discussion of alternatives shall focus on alternatives to the project or project location that are feasible, would meet most or all of the project objectives, and would substantially reduce one or more of its significant impacts.
- The range of alternatives must include the No-Project Alternative. The no project analysis will discuss the existing conditions at the time the NOP was published, as well as conditions that would reasonably 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. The No-Project Alternative is not required to be feasible, meet any of the project objectives, or reduce the project's expected impacts to any degree.
- The range of alternatives required is governed by a *rule of reason*. The EIR must evaluate only those alternatives necessary to permit a reasoned choice. An EIR is not required to analyze every conceivable alternative to a project.
- An EIR does not need to consider an alternative that would not achieve the basic project objectives, for which effects cannot be reasonably ascertained, and for which implementation is remote and speculative.

4.1 Project Objectives

The essential goal of the project is to provide renewable solar-sourced energy at a competitive price in compliance with the project's large generator interconnecting agreement, generating electrical power from a clean source that would supplement the energy capacity of the existing power grid, thereby increasing the stability and operability of the transmission system, as well as offsetting supplies from fossil fuel generating sources. The applicant is proposing to construct the project to meet the objectives identified in Chapter 2, Section 2.2, *Project Objectives*, thus supporting statewide and local objectives.

4.2 Significant Impacts

Alternatives should provide a means of reducing the level of one or more significant impacts that would otherwise result from implementation of the project. Chapter 6 of the Community Plan EIR evaluated three alternatives to the Community Plan to determine whether the alternatives would

reduce or avoid the significant impacts that were identified for the Community Plan: the No Project Alternative, Low Density Alternative, and Mitigated Alternative. Refer to the discussion on pages 6-1—6-18 of the Community Plan EIR, which is incorporated by reference.

As discussed in Chapter 3, *Impact Analysis*, of this SEIR, the proposed project would continue to result in the following project-specific significant impacts identified in the Community Plan EIR, which are the focus of this alternatives analysis:

- **Impact AES-1:** Potential to substantially degrade the existing visual character or quality of public views of the site and its surroundings (in nonurbanized areas), including scenic vistas. The solar project would introduce solar facilities within scenic vistas.
- **Impact AES-2:** Potential to substantially damage scenic resources (including trees, rock outcroppings, and historic buildings) within a state scenic highway. The solar project would introduce solar facilities within viewsheds from State Route (SR) 152, a scenic highway.
- **Impact AES-3:** Introduction of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area. The solar project would introduce nighttime construction lighting near adjacent residential uses.
- **Impact AQ-3:** Expose sensitive receptors to substantial pollutant concentrations. Grading for the solar project could release spores of the *Coccidioides immitis* fungus, including additional grading outside the Community Plan area.
- **Impact BIO-1:** Potential to adversely effect, either directly or through habitat modifications, on any special-status species. Construction and operation of the solar project could adversely affect golden eagle, Swainson's hawk, western burrowing owl, loggerhead shrike, American badger, and San Joaquin kit fox, including within potential habitat areas outside the Community Plan area.
- **Impact BIO-3:** Potential disruption of wildlife movement corridor. Solar project features and lighting could disturb wildlife movement through the project area, including areas outside the Community Plan area.
- **Impact CUL-1:** Potential to cause a substantial adverse change in the significance of a historical resource. Construction activities for the solar project could encounter unknown historical resources, including within areas outside the Community Plan area.
- **Impact CUL-2:** Potential to cause a substantial adverse change in the significance of an archaeological resource. Construction activities for the solar project could encounter unknown archaeological resources, including within areas outside the Community Plan area.
- **Impact CUL-3:** Disturbance of any human remains, including those interred outside of formal cemeteries. Construction activities for the solar project could encounter unknown human remains, including within areas outside the Community Plan area.
- **Impact GEO-1:** Direct or indirect exposure of people or structures to potential substantial adverse effects involving strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides. The solar project would introduce structures that are susceptible to strong seismic ground shaking and damage, including structures within areas outside the Community Plan area.
- **Impact GEO-2:** Potential to result in substantial soil erosion or the loss of topsoil. Grading for the solar project could cause erosion, including additional grading outside the Community Plan area.

- **Impact GEO-3:** Placement of project-related facilities on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse. The solar project would introduce structures that are susceptible to seismic hazards and damage, including structures within areas outside the Community Plan area.
- **Impact GEO-4:** Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property. The solar project would introduce structures that are susceptible to damage from expansive soils, including structures within areas outside the Community Plan area.
- **Impact GEO-5:** Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Construction activities for the solar project could encounter unknown paleontological resources, including within areas outside the Community Plan area.
- **Impact HAZ-3:** Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. If future schools within the Community Plan area are constructed near the solar project, the schools could be exposed to health and safety impacts from solar project pipelines and electrical transmission lines.
- **Impact WQ-1:** Violation of any water quality standard or WDR. Construction activities for the solar project could impair surface and groundwater quality, including within areas outside the Community Plan area.
- **Impact WQ-5:** Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Construction activities for the solar project could impair surface and groundwater quality, including within areas outside the Community Plan area.
- **Impact LU-2:** Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. Because of the project-specific significant impacts included in this list, the project could conflict with County General Plan and Community Plan policies adopted for the purpose of avoiding or mitigating an environmental effect.
- **Impact NOI-1:** Generation of a substantial temporary or permanent increase in existing ambient noise levels in the project vicinity. The solar project could require emergency generator testing, which could result in noise levels that exceed the County's allowable noise levels.
- **Impact TCR-1:** Impact a tribal cultural resource, defined in Public Resources Code section 21074, resources listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1. Construction activities for the solar project could encounter unknown tribal cultural resources, including within areas outside the Community Plan area.
- **Impact UT-4:** Project-related exceedance of the relevant landfill's permitted capacity. Landfill capacity in the County has not been identified beyond 2054. It is unknown whether sufficient landfill capacity will exist to serve project operation and decommissioning between 2054 and 2060.
- **Impact WF-3:** Require the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. Construction and operation of the solar project would introduce equipment, including Li-ion batteries, that could exacerbate the risk of wildfire, including in areas outside the Community Plan.

The SEIR analysis determined that with implementation of applicable Community Plan mitigation measures and new project-specific mitigation measures, no new significant impacts or substantially more severe significant impacts would occur compared to the significant impacts identified in the previous EIR, with one exception: Impact UT-4 (project-related exceedance of the relevant landfill's permitted capacity). Under the proposed project, this impact would remain significant and unavoidable and would be more severe than the significant and unavoidable impact identified in the previous EIR due to the additional solid waste that would be generated during solar project decommissioning (and to a lesser extent, operation between 2054 and 2060).

4.3 Methodology and Screening Criteria

A range of potential alternatives was developed and screened. Several representative alternatives were considered. The following criteria were used to screen potential alternatives.

- Does the alternative meet most or all of the project objectives?
- Is the alternative potentially feasible?
- Would the alternative substantially reduce one or more of the project-specific significant impacts associated with the project?

In order to meet the project objectives, potential solar facility locations needed to meet all of the following conditions.

- Must be allowed by existing or proposed zoning.
- There must be an electrical substation nearby.
- Suitable electrical infrastructure capacity must be available.
- Minimum area of 1400 acres for a 200 megawatt (MW) project.
- Electrical power purchaser available at project location.
- Viable terrain and solar resource to produce economically viable electricity.
- Civil and geotechnical conditions to allow feasible construction costs.
- Limited residential or commercial development in project vicinity.

Based on the State CEQA Guidelines, "feasible" is defined as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors" (State CEQA Guidelines Section 15364). CEQA does not require that an EIR determine the ultimate feasibility of a selected alternative, but rather that an alternative be potentially feasible. Accordingly, no economic studies have been prepared regarding the economic feasibility of the selected alternatives.

The significant effects of the project may include those that are significant and unavoidable, or that are less than significant with mitigation (either Community Plan mitigation or new, project-specific mitigation). The alternative should provide a means of reducing the level of impact that would otherwise result from implementation of the project. As noted above, the alternatives analysis focuses on reducing or avoiding the new project-specific significant impacts (all of which are associated with the solar project), rather than the significant impacts that were identified in the previous EIR but would not be any different or more severe under the proposed project.

Those alternatives that meet the project objectives, that are potentially feasible, and that would reduce one or more of the project-specific significant impacts are discussed in greater detail below.

4.3.1 Alternatives Considered but Rejected

Offsite Alternative

The solar project site is uniquely suited for solar development for following reasons:

- It is located adjacent to an existing substation (the PG&E Los Banos substation) and would maximize the utilization of existing grid infrastructure. The PG&E Los Banos substation has been determined to be a desirable place to interconnect an energy generation project because power injected at this location has been confirmed to require minimal network system transmission upgrades. An interconnection study and Interconnection Agreement for the PG&E Los Banos substation and the solar project was already prepared. Changing the substation would require an additional 5-7 years of studies and agreements.
- The solar project site is comprised of non-native grassland and does not include FMMP-mapped farmland. It is not located in the County agricultural preserve or subject to a Williamson Act contract.
- The majority of the solar project site is considered unsuitable to low quality San Joaquin kit fox habitat due to dryland farming, lack of preferred prey base, and barriers to dispersal.
- The project applicant maintains existing land leases with the on-site landowners.
- The site is ideally located at the intersection of two major freeways and would reduce construction truck and traffic trips compared to a more remote site. Further, Billy Wright Road can serve as a construction access point, reducing the potential for construction truck queueing along the freeways.
- An existing solar project (the Wright Solar Project) is located near the solar project site, and adjacent residential areas are sparsely developed. The area is generally considered rural and compatible for solar development.

As a result, while other sites with similar size, configuration, and use history may exist in the region, alternative project sites in the area are likely to have similar or greater impacts based on the known general conditions in the area and the magnitude of the project.

Furthermore, no other comparable sites are owned or controlled by applicant that would reduce or avoid project impacts. For these reasons, no other sites were identified that would feasibly accommodate the solar project and meet the project objectives while avoiding or substantially reducing significant impacts.

Wind Power Alternative

Wind power is an alternative energy source that would help meet California's RPS. Currently, typical new wind farm installations consist of three-bladed turbines that range in height from 300 to 500 feet, with blades up to 150 feet in length. The turbines are arranged on a site in patterns that maximize the wind available at each turbine. As with a solar energy facility, individual turbines would be interconnected with a medium-voltage power collection system and a communications network. A substation would increase the medium voltage electrical current through a transformer before connection to the high-voltage transmission system. However, wind power is only feasible in those areas of the state with substantial, sustained winds. A major wind farm is in operation on the ridges south of Pacheco Pass west of the project site. This facility has the capacity to produce approximately 16 MW of energy.

Areas with annual average wind speeds of 6.5 meters per second or more at a height of 80 meters are generally considered to have a resource suitable for wind development, according to the U.S. Department of Energy. Areas with average winds speeds below 6.5 meters per second are not considered suitable (U.S. Department of Energy 2010).

The project site has an annual wind speed of 4.0–4.5 meters per second at a height of 80 meters according to mapping by the National Renewable Energy Lab (U.S. Department of Energy 2010). Therefore, it is not physically suitable for commercial wind development and this alternative is infeasible. Furthermore, a wind power alternative would be inconsistent with the project’s underlying purpose to supply renewable solar-sourced electricity at a competitive price.

No Residential Redesignation Alternative

The proposed project includes an amendment to the General Plan to re-designate roughly 202.8 acres off-site and immediately south of the solar project site from low-density residential to high-density/medium-density residential. The purpose of the off-site residential redesignation is to preserve the overall number of affordable housing units that could be developed in the County during the life of the solar project. That is, the off-site residential redesignation would maintain the County’s capacity for developing new high-density/medium-density housing.

The No Residential Redesignation Alternative would not include the off-site residential redesignation. Although all of the project-specific significant impacts are related to the solar project, and none of are related to the off-site residential redesignation, this alternative was considered in response to comments received on the Notice of Preparation (NOP).

This alternative was rejected because it would not meet the project objective to maintain the total residential development capacity in Merced County, ensuring that the County is able to meet its Regional Housing Needs Assessment (RHNA) allocation in accordance with the County’s Housing Element and State law (Government Code Section 65580 (et seq.)). Moreover, it could cause the County to be out of compliance with State housing law.

Relocated Residential Redesignation Alternative

As discussed above, the proposed off-site residential redesignation would allow the County to maintain its overall capacity for developing new high-density/medium-density housing. The County considered whether a Relocated Residential Redesignation Alternative that would upzone other parcels within the Community Plan area located further from the Billy Wright Landfill would be feasible. Although all of the project-specific significant impacts are related to the solar project, and none of are related to the off-site residential redesignation, this alternative was considered in response to comments received on the NOP.

One of the objectives of the Community Plan was “provide a diverse range and style of single- and multi-family housing units that reflect a variety of socioeconomic and design characteristics”. The proposed off-site residential redesignation is proposed by the County in order to continue to meet this objective of the Community Plan.

The Community Plan area includes approximately 1,903 acres of land designated for low-density residential use. The majority (approximately 611) of those acres are located within the solar project site. The remaining low-density areas are located north of SR 152, west of the PG&E substation, and south and southeast of the Billy Wright Landfill. The land north of SR 152 does not

provide sufficient acreage to upzone to maintain overall housing capacity, given the amount residential acreage that would be occupied by the solar project. The land west of the PG&E substation is not a desirable or compatible location for increased density given its location adjacent to the Community Plan's open space preserve. This leaves the land south and southeast of the Billy Wright Landfill as the only area available for upzoning. Therefore, this alternative was rejected as infeasible because no other parcels suitable for upzoning exist within the Community Plan area.

Increased Setback Near SR 152 Alternative

Under the proposed project, the solar arrays would be set back approximately 675 feet from the northern property line along SR 152. The Increased Setback Near SR 152 Alternative would increase this set back to approximately 1,350 feet, the maximum distance practicable while still maintaining a sufficient number of solar arrays to meet the project objectives. This alternative was considered for its ability to reduce aesthetic impacts related to scenic vistas and views from SR 152, a scenic highway.

As shown in Key View 2 in Figure 3.1-3 in Section 3.1, *Aesthetics*, of this SEIR, direct views of the solar project site are available from this location, with panels visible in the foreground, middle-ground, and background. While the extended setback would reduce the solar arrays from this location, they would still be visible. Therefore, this alternative was rejected because it would not avoid or meaningfully reduce the project's significant impacts.

Reduced Footprint Outside Community Plan Area Alternative

Under the proposed project, approximately 561 acres of the solar project would be located outside of the Community Plan area. The Reduced Footprint Outside Community Plan Area Alternative would decrease the size of the solar project outside the Community Plan area by approximately 60 acres, the maximum distance practicable while still maintaining a sufficient number of solar arrays to meet the project objectives. The 60 acres that would be removed from the solar project site would be located just west of I-5. This alternative was considered because of its potential to reduce or avoid project-specific significant impacts that would occur within this portion of the solar project site, which was not studied in the Community Plan EIR (e.g., biological resources, cultural resources, geology/soils, hydrology and water quality, etc.).

While this area was not studied in the Community Plan EIR, it was studied in this SEIR. The impacts of solar project construction and operation in this area would not be appreciably different than the impacts of solar project construction and operation in the area within the Community Plan Boundary. Since development of the Community Plan has not occurred, the existing conditions of both areas are very similar. For these reasons, an alternative that would avoid the area outside of the Community Plan boundary would not substantially reduce or avoid impacts except to the extent that the disturbed area would be smaller than under the proposed project. A smaller project site is considered in Alternative 2, the Reduced Footprint Alternative. Therefore, the Reduced Footprint Outside Community Plan Area Alternative was not considered further in this SEIR.

No Emergency Generator Alternative

The No Emergency Generator Alternative would not include an emergency generator as part of the solar project. This alternative was considered because of its potential to avoid generator noise impacts on the adjacent residences to the north. This alternative was rejected as infeasible because it would leave the project without a backup power source in the event of a failure, which could result in a significant disruption to the regional power supply and a resulting hazard to the public. It would also be inconsistent with the project's objective to provide clean, reliable electricity.

4.3.2 Alternatives Analyzed in this SEIR

The following discussion examines the environmental impacts of the No-Project Alternative and the Reduced Footprint Alternative. Where an alternative would have the same significant impacts as the project, the pertinent mitigation measure or measures identified for the project would apply to the alternative as well.

Alternative 1—No-Project Alternative

CEQA Guidelines Section 15126.6(e) requires evaluation of a “no project” alternative, stating “[t]he purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.” CEQA Guidelines Section 15126.6(e)(2) requires that the no project alternative analysis “discuss the existing conditions...as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and policies and consistent with the available infrastructure and community services.” As noted in CEQA Guidelines Section 15126.6, an EIR for “a development project on identifiable property” typically analyzes a no project alternative, i.e., “the circumstance under which the project does not proceed. Such a discussion would compare the environmental effects of the property remaining in its existing state against environmental effects that would occur if the project is approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this ‘no project’ consequence should be discussed.”

The majority of the solar project site is designated as Urban Community under the *Villages of Laguna San Luis Community Plan*. Over the longer term, it is possible that buildout of the Community Plan would occur at some point within the 30-year period in which the proposed project otherwise would operate were the County not to approve the solar project. as a response to California's persistent housing crisis. This “no project, Community Plan buildout” scenario has already been effectively addressed by the Community Plan EIR's assessment of the Villages of Laguna San Luis Community Plan.

However, no buildout of the Community Plan has occurred since the plan was adopted in 2008, nor are there any projects that are currently proposed within the Community Plan area (other than the proposed project). None of the roadways or utility systems that would be needed to support buildout of the Community Plan have been constructed. Therefore, this SEIR's no project analysis focuses on a separate discussion of what a no project alternative would look like if neither the Las Camas solar project nor the Community Plan were implemented.

Under this version of the No Project Alternative, the project site would remain in its existing state. The solar project site would continue to be used for dry-land farming and grazing. The gen-tie line would not be constructed, and no improvements would be made to the PG&E substation. The off-site

residential redesignation would not occur and the Community Plan would not be built out. The off-site mitigation site would not be placed into a conservation easement and managed under the provisions of an HCP.

Impact Analysis

Aesthetics

As described above, under the No Project Alternative, the project site would remain in its existing state and would continue to be used for dry-land farming and grazing. Because no land would be disturbed under the No Project Alternative, there would be no potential for there to be visual impacts to the visual quality and character of the site; for visual impacts to occur to the SR 152 corridor, an Officially Designated State Scenic Highway, from visual changes occurring at the project site that includes impacts to scenic vistas available from SR 152; or changes in daytime or nighttime light or glare. This would result in no impact under the No Project Alternative, reduced as compared to the project. The No Project Alternative would avoid the significant aesthetic impacts of the project.

Agricultural Resources

Under the No Project Alternative, the project site would remain in its existing state. No Prime Farmland, Farmland of Statewide Importance, or Unique Farmland (Farmland) exists at the solar project site, and the solar project site is not subject to any Williamson Act contracts. Therefore, even though the No Project Alternative would result in no changes to the project site, it would have no impact on Farmland or conflicts with Williamson Act contracts, similar to the proposed project.

Air Quality

Under the No Project Alternative, the Project would not be developed, and the project site would remain in its existing state. The solar project site would continue to be used for dry-land farming and grazing. Because the solar panels and associated equipment (e.g., BESS equipment areas and substation) would not be installed under this alternative and the gen-tie line would not be constructed, the construction and operational air pollutant emissions that would result from Project implementation would not occur. Similarly, improvements would not be made at the PG&E Substation site and no new construction or operational air pollutant emissions would be generated at the PG&E site under this alternative. In addition, the off-site residential redesignation would not occur. The off-site mitigation site would not be placed into a conservation easement and managed under the provisions of an HCP. Therefore, the No Project Alternative would avoid the construction and operational air pollutant emissions that would result from the Project because no development would occur at the solar project site. The project's significant impact from possible exposure to Valley Fever during construction would also be avoided. Impacts would be reduced compared to the proposed project.

Biological Resources

Under the No Project Alternative, the project would not be developed, and the project site would remain in its existing state. Consequentially, no ground-disturbing construction or operational activities would occur, and there would be no impacts to wildlife, plant species, or their habitat. Additionally, the off-site mitigation site would not be placed into a conservation easement and managed under the provisions of an HCP; this area would continue to provide suitable habitat for

San Joaquin kit fox and Swainson's hawk, similar to the proposed project, however the land would not be protected from future development. The project's significant impacts to special status species and wildlife movement corridors would be avoided, and impacts would be reduced compared to the proposed project.

Cultural Resources

Under the No Project Alternative, the project site would remain in its existing state. Because the solar panels and associated equipment (e.g., BESS equipment areas and substation) would not be installed under this alternative and the gen-tie line would not be constructed, potential impacts to cultural resources that could result from Project implementation would not occur. Because no ground-disturbing construction activities would occur, there would be no impacts to previously unidentified buried archaeological resources. This would result in no impact under the No Project Alternative, reduced as compared to the project. The project's significant impacts related to the potential for encountering historical resources, archaeological resources, and human remains during construction would also be avoided.

Energy

Under the No Project Alternative, the project would not be developed, and the project site would remain in its existing state. Because the solar panels and associated equipment (e.g., no construction, operation, and decommissioning activities) would not be installed, and no PG&E substation improvements would be incorporated under this alternative, there would be no increase in energy demand. The No Project Alternative would therefore have no impact on energy, compared to the Project's less than significant impacts. However, it should be noted that the No Project Alternative would not construct a solar project that would ultimately produce a new source of renewable energy within Merced County.

Geology, Soils, and Paleontological Resources

Under the No Project Alternative, the project site would remain in its existing state. Because the solar panels and associated equipment (e.g., BESS equipment areas and substation) would not be installed under this alternative and the gen-tie line would not be constructed, potential impacts related to rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, or landslides that could result from Project implementation would not occur. The project site is not located near any known regional faults. Therefore, the potential for a known earthquake fault to rupture and cause substantial adverse effects is low. Soils at the solar project site range from low to high in expansiveness. Structures (e.g., solar arrays) would not be constructed, therefore there would be no construction on soils with high expansiveness and there would be impacts related to erosion hazards. Because no ground-disturbing construction activities would occur, there would be no impacts related to erosion hazards and no paleontological resources would be impacted. This would result in no impact under the No Project Alternative, reduced as compared to the project. This alternative would avoid the project's significant impacts related to exposing structures to seismic risk and hazards.

Greenhouse Gas Emissions (GHG)

Under the No Project Alternative, the Project would not be developed, and the project site would remain in its existing state. The solar project site would continue to be used for dry-land farming and grazing. Because the solar panels and associated equipment (e.g., BESS equipment areas and

substation) would not be installed under this alternative and the gen-tie line would not be constructed, the construction and operational greenhouse gas emissions that would result from Project implementation would not occur. Similarly, improvements would not be made at the PG&E Substation site and no new construction or operational greenhouse gas emissions would be generated at the PG&E site under this alternative. Therefore, the No Project Alternative would avoid the construction and operational greenhouse gas emissions that would result from the Project because no development would occur at the solar project site. However, it should be noted that the No Project Alternative would not construct a solar project that would add renewable solar-generated energy to the electricity supply and result in a long-term net reduction in GHG emissions. This alternative would therefore result in increased GHG emissions.

Hazards and Hazardous Materials

Under the No Project Alternative, the project site would remain in its existing state and no new land uses would be introduced. Potential impacts to hazards and hazardous materials that could result from Project implementation and decommissioning would not occur since the solar panels and associated equipment (e.g., BESS equipment areas and substation) would not be installed under this alternative and the gen-tie line would not be constructed. Therefore, because no ground-disturbing construction or operational activities would occur, there would be no hazards or hazardous materials impacts related to the public or environment due to the routine transport, use, or disposal of hazardous materials; a release of hazardous materials; the emission or handling of hazardous materials within 0.25 mile of a school; development on a site included on a list of hazardous materials sites (e.g., Cortese List); interference with an adopted emergency response or evacuation plan; and/or exposure to a risk of injury or loss from wildfire under the No Project Alternative. Impacts would be reduced compared to the project, and the project's significant impact related to siting industrial equipment near potential future schools would be avoided.

Hydrology and Water Quality

Under the No Project Alternative, impervious area, stormwater flow rates, and drainage patterns would remain unchanged. Under this alternative, the impervious area would not increase in comparison to the Project, and there would be no increased runoff volumes or sources of polluted runoff. No groundwater would be utilized for construction or operation water supply; therefore, there would be no impacts on groundwater quality or supply. The off-site mitigation site would not be placed into a conservation easement and managed under the provisions of an HCP. Therefore, the No Project Alternative would have no impact on hydrology and water quality, representing a lesser impact than the Project's less-than-significant-with-mitigation impact. This alternative would avoid the project's significant impact related to surface and groundwater quality degradation.

Land Use and Planning

Under the No Project Alternative, no new land uses would be introduced, and the project site would remain in its current condition. No new impact would occur relative to existing conditions, and impacts would be less than those of the proposed project, which would be less than significant with implementation of project-specific mitigation measures. This alternative would avoid the project's significant impacts related to conflicts with County General Plan and Community Plan policies adopted for the purpose of avoiding or mitigating an environmental effect.

Mineral Resources

As described above, under the No Project Alternative, the project site would remain in its existing state and would continue to be used for dry-land farming and grazing. Similar to the project, the County General Plan EIR does not identify any known significant sand or gravel resources within the project site, resulting in no impact related to locally important mineral resources, the same as the Project. However, State-mapped mineral resource zones are present on the solar project site, the PG&E substation area, and the off-site mitigation site. Because no land would be disturbed under the No Project Alternative, there would be no potential for the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. This would result in no impact under the No Project Alternative, reduced as compared to the project.

Noise

Under the No Project Alternative, the Project would not be developed, and the project site would remain in its existing state. The solar project site would continue to be used for dry-land farming and grazing. Because the solar panels and associated equipment (e.g., BESS equipment areas and substation) would not be installed under this alternative and the gen-tie line would not be constructed, the construction and operational noise that would result from Project implementation would not occur. Similarly, improvements would not be made at the PG&E Substation site and no new construction or operational noise would be generated at the PG&E site under this alternative. In addition, the off-site residential redesignation would not occur. The off-site mitigation site would not be placed into a conservation easement and managed under the provisions of an HCP. Therefore, the No Project Alternative would avoid the construction and operational noise that would result from the Project because no development would occur at the solar project site; the project's significant impact from emergency generator testing would also be avoided.

Population and Housing

Under the No Project Alternative, the project site would remain in its existing state and the solar project site would continue to be used for dry-land farming and grazing. The off-site residential redesignation would not occur. Because no construction activities would occur, there would be no temporary construction employment associated with the project. Therefore, the No Project Alternative would have no impact on population and housing, representing a lesser impact than the project.

Public Services

Under the No Project Alternative, the project site would remain in its existing state and the solar project site would continue to be used for dry-land farming and grazing. The off-site residential redesignation would not occur. Similarly, there would be no solar project under the No Project Alternative, and therefore no need for the up to eight employees necessary for its operations. Because no construction or operation activities would occur, there would be no temporary construction employment or permanent employees associated with the project and therefore no increase in the need for new or physically altered governmental facilities, nor any change to any service ratios, response times, or other performance objectives associated with public services. Therefore, the No Project Alternative would have no impact on public services, representing a lesser impact than the project.

Recreation

Under the No Project Alternative, the project site would remain in its existing state and the solar project site would continue to be used for dry-land farming and grazing. The off-site residential redesignation would not occur. Similarly, there would be no solar project under the No Project Alternative, and therefore no need for the up to eight employees necessary for its operations. Because no construction or operation activities would occur, there would be no temporary construction employment or permanent employees associated with the project and therefore no increase in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. Therefore, the No Project Alternative would have no impact on public services, representing a lesser impact than the project.

Transportation/Traffic

Under the No Project Alternative, the site would remain in its existing condition and no construction would occur. Therefore, because no new transportation facilities or vehicle trips would occur, the No Project Alternative would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b), substantially increase hazards due to a geometric design feature or incompatible uses, or result in inadequate emergency access. Thus, the No Project Alternative would result in fewer impacts than the project related to transportation.

Tribal Cultural Resources

Under the No Project Alternative, the project site would remain in its existing state. Because the solar panels and associated equipment (e.g., BESS equipment areas and substation) would not be installed under this alternative and the gen-tie line would not be constructed, potential impacts to tribal cultural resources that could result from Project implementation would not occur. Because no ground-disturbing construction activities would occur, there would be no impacts to tribal cultural resources. This would result in no impact under the No Project Alternative, and would avoid the project's significant impact on tribal cultural resources.

Utilities

Under the No Project Alternative, the Project would not be developed, and the project site would remain in its existing state. Because the solar panels and associated equipment (e.g., BESS equipment areas and substation) would not be installed under this alternative, there would be no increase in use of utilities and service systems or in demand for utilities and service systems including new or expanded water supply, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, or generation of solid waste. The No Project Alternative would therefore have no impact on utilities and service systems, and would avoid the project's significant and unavoidable impact on landfill capacity.

Wildfire

Under the No Project Alternative, the project would not be developed, and the project site would remain in its existing state. The solar project site would continue to be used for dry-land farming and grazing. Because the solar panels and associated equipment (e.g., BESS equipment areas and substation) would not be installed under this alternative and the gen-tie line would not be

constructed, the construction and operational wildfire related impacts that would result from project implementation would not occur. Specifically, mitigation measures WF-3a and WF-3b would not be required as fire risks associated with the use of lithium-ion batteries that would be used during project operation would no longer occur. Therefore, the No Project Alternative would avoid the construction and operational wildfire impacts that would result from the project because no development would occur at the solar project site. No new impact would occur relative to existing conditions, and impacts would be less than those of the proposed project, which would be less than significant with implementation of project-specific mitigation measures.

Cumulative Impacts

Aesthetics

Under the No Project Alternative, the project site would remain in its existing state, would continue to be used for dry-land farming and grazing, and buildout of the Community Plan would not occur. Therefore, the No Project Alternative would result in no impact on aesthetics. As such, the No Project Alternative would not contribute to a cumulative impact, and would have no cumulative impact on aesthetics. The No Project Alternative would avoid the significant and unavoidable cumulative aesthetic impacts identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Agricultural Resources

Under the No Project Alternative, the project site would remain in its existing state, and there would be no impact on Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or cancellations to Williamson Act contracts on the site. Therefore, the No Project Alternative would have no impact on agricultural resources. As such, the No Project Alternative would not contribute to a cumulative impact, and would have no cumulative impact on agricultural resources. The No Project Alternative would avoid the less than significant cumulative impact identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Air Quality

Under the No Project Alternative, the project site would remain in its existing state, no construction or operational air pollutant emissions would be generated, and the possible exposure to Valley Fever would be avoided. Therefore, the No Project Alternative would have no impact on air quality. As such, the No Project Alternative would not contribute to a cumulative impact, and would have no cumulative impact on air quality. The No Project Alternative would avoid the less than significant cumulative impact identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Biological Resources

Under the No Project Alternative, the project would not be developed, and the project site would remain in its existing condition, consequently, no impacts to wildlife, plant species, or their habitat would occur. Therefore, the No Project Alternative would have no impact on biological resources. As such, the No Project Alternative would have no cumulative impact on biological resources. However, the off-site mitigation site would not be placed into a conservation easement to protect a contiguous

tract of habitat for covered species. The No Project Alternative would avoid the less than significant impacts identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Cultural Resources

Under the No project Alternative, the project site would remain in its existing condition, would not be developed, and no ground-disturbing construction activities would occur. Therefore, the No Project Alternative would have no impact on cultural resources. As such, the No Project Alternative would have no cumulative impact on cultural resources. The No Project Alternative would avoid the less than cumulatively considerable cultural resources impact identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Energy

Under the No Project Alternative, the project site would remain in its existing state, and the project would not be developed. Therefore, the No Project Alternative would have no impact on energy. As such, the No Project Alternative would not contribute to a cumulative impact, and would have no cumulative impact on energy. The No Project Alternative would avoid the less than significant cumulative impacts identified for the proposed project, discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Geology and Soils

Under the No Project Alternative, the project site would remain in its existing state, the project would not be developed, and no ground-disturbing construction activities potentially resulting in erosion hazards or impacts on paleontological resources would occur. Therefore, the No Project Alternative would have no impact on geology, soils, and paleontological resources. As such, the No Project Alternative would not contribute to a cumulative impact, and would have no cumulative impact on geology, soils, and paleontological resources. The No Project Alternative would avoid the less than significant cumulative impacts identified for the proposed project, discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Greenhouse Gas Emissions

Climate change is a global problem, and GHG impacts are inherently cumulative. Therefore, the analysis provided for the proposed project is inclusive of cumulative impacts. Under the No Project Alternative, the project site would remain in its existing state, the project would not be developed, and no construction and operational GHG emissions that would result from the proposed project would not occur. However, there would no longer be a long-term net reduction in GHG emissions under the No Project Alternative, as the solar project would not be constructed and provide a new source of renewable energy. Therefore, the No Project Alternative would result in increased long-term GHG emissions. Impacts would be greater than those of the proposed project.

Hazards and Hazardous Materials

Under the No Project Alternative, the project site would remain in its existing state, and no new land uses would be developed and no ground-disturbing construction or operational activities would occur that would introduce hazards or hazardous materials to the project site and the surrounding area. Therefore, the No Project Alternative would have no impact on hazards and hazardous

materials. As such, the No Project Alternative would not contribute to a cumulative impact, and would have no cumulative impact on hazards and hazardous materials. The No Project Alternative would avoid the less than significant cumulative hazards and hazardous materials impacts identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Hydrology and Water Quality

Under the No Project Alternative, the project site would remain in its existing state, and current impervious areas, stormwater flow rates, and drainage patterns on the project site would remain unchanged. In addition, no groundwater would be used as the water supply for construction and operation activities. Therefore, the No Project Alternative would have no impact on hydrology and water quality. As such, the No Project Alternative would not contribute to a cumulative impact, and would have no cumulative impact on hydrology and water quality. The No Project Alternative would avoid the less than significant cumulative hydrology and water quality impacts identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Land Use and Planning

Under the No Project Alternative, the project site would remain in its existing state, the project would not be developed, and buildout of the Community Plan would not occur. Therefore, the No Project Alternative would have no impact on land use and planning. As such, the No Project Alternative would not contribute to a cumulative impact, and would have no cumulative impact on land use. The No Project Alternative would avoid the less than significant cumulative impacts identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Mineral Resources

Under the No Project Alternative, the project site would remain in its existing state, would continue to be used for dry-land farming and grazing, and no land would be disturbed as a result of buildout of the Community Plan nor the proposed project. Therefore, the No Project Alternative would have no impact on mineral resources. As such, the No Project Alternative would not contribute to a cumulative impact, and would have no cumulative impact on mineral resources similar to the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be the same as those of the proposed project.

Noise

Under the No Project Alternative, the project would not be developed, and the construction and operational noise that would result from project implementation would not occur. Therefore, the No Project Alternative would have no impact on noise. As such, the No Project Alternative would not contribute to a cumulative impact, and would have no cumulative impact on noise. The No Project Alternative would avoid the less than significant cumulative impacts identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Population and Housing

Under the No Project Alternative, the project site would remain in its existing state and would continue to be used for dry-land farming and grazing. Because no construction or operation activities associated with the project would occur, there would be no temporary construction employment or operational permanent employees associated with the project. Therefore, the No Project Alternative would have no impact on population and housing. As such, the No Project Alternative would not contribute to a cumulative impact, and would have no cumulative impact on population and housing. The No Project Alternative would avoid the less than significant cumulative impacts identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Public Services

Under the No Project Alternative, the project site would remain in its existing state, and would continue to be used for dry-land farming and grazing. Because no construction or operation activities associated with the project would occur, there would be no temporary construction employees or permanent operation employees. Therefore, the No Project Alternative would have no impact on public services, and there would be no increase in the need for new or physically altered governmental facilities. As such, the No Project Alternative would not contribute to a cumulative impact, and would have no cumulative impact on public services. The No Project Alternative would avoid the less than significant cumulative impacts identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Recreation

Under the No Project Alternative, the project site would remain in its existing state, and would continue to be used for dry-land farming and grazing. Because no construction or operation activities associated with the project would occur, there would be no temporary construction employees or permanent operation employees. Therefore, the No Project Alternative would have no impact on recreational facilities, and there would be no increase in the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration would occur or be accelerated. As such, the No Project Alternative would not contribute to a cumulative impact, and would have no cumulative impact on recreation. The No Project Alternative would avoid the less than significant cumulative impacts identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Transportation/Traffic

Under the No Project Alternative, the project site would remain in its existing condition, the project would not be developed, and no new transportation facilities or vehicle trips would occur. Therefore, the no Project Alternative would have no impact on transportation or traffic. As such, the No Project Alternative would not contribute to a cumulative impact, and would have no impact cumulative impact on transportation or traffic. The No Project Alternative would avoid the less than significant cumulative impacts identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Tribal Cultural Resources

Under the No project Alternative, the project site would remain in its existing condition, would not be developed, and no ground-disturbing construction activities would occur. Therefore, the No Project Alternative would have no impact on tribal cultural resources. As such, the No Project Alternative would have no cumulative impact on tribal cultural resources. The No Project Alternative would avoid the less than cumulatively considerable tribal cultural resources impact identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Utilities

Under the No Project Alternative, the project would not be developed, and the project site would remain in its existing state. Because the proposed project would not be constructed and operated under this alternative, there would be no increase in use of utilities and service systems or in demand for utilities and service systems. Therefore, the No Project Alternative would have no impact on utilities and service systems. As such, the No Project Alternative would have no cumulative impact on utilities and services systems. The No Project Alternative would avoid the significant and unavoidable cumulative impact on utilities and service systems identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Wildfire

Under the No project Alternative, the project site would remain in its existing condition, would not be developed, and no construction or operational activities associated with the project would occur. Therefore, the No Project Alternative would have no impact on wildfire. As such, the No Project Alternative would have no cumulative impact on wildfire. The No Project Alternative would avoid the less than cumulatively considerable wildfire impact identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be less than those of the proposed project.

Alternative 2—Reduced Footprint Alternative

This alternative would reduce the area available to locate solar panels in the southern portion of the solar project site that abuts the western edge of the Billy Wright Landfill. Under the Reduced Footprint Alternative, the solar project site would be approximately 1,681 acres in size, compared to 1,741 acres under the proposed solar project (a reduction of approximately 60 acres). The 60-acre area that would be removed from the proposed solar project footprint would remain as vacant grassland and could continue to be used for dry-land farming and grazing. Under this alternative, the solar project would permanently disturb approximately 31.6 acres through installation of solar arrays and related facilities (compared to 32.77 acres under the proposed project) and would temporarily disturb approximately 1,198 acres during construction (compared to 1,240 acres under the proposed project). Figure 4-1 illustrates the geographical extent of the Reduced Footprint Alternative.

The Reduced Footprint Alternative would consist of the same mechanical components as the proposed project but with fewer solar arrays. The Reduced Footprint Alternative would have a similar number of PV inverters and lithium-ion batteries as the solar project, and the project substation would be the same. Like the proposed project, the Reduced Footprint Alternative could be developed under an AC option or a DC option (refer to Section 2.3.2 in Chapter 2, *Project Description*), and the battery energy storage system (BESS) equipment under each option would be the same.

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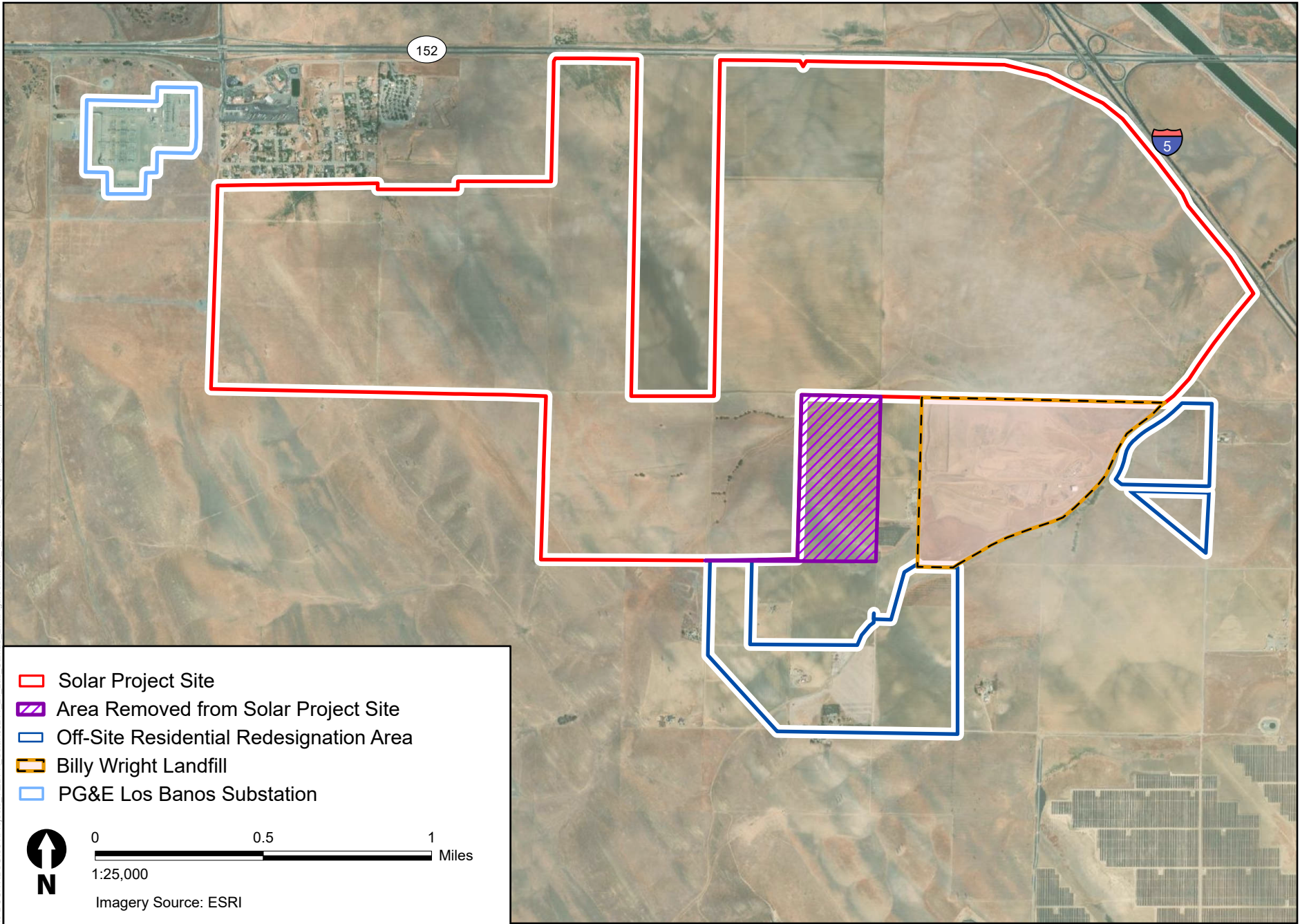


Figure 4-1
Reduced Footprint Alternative

As discussed in Section 3.11, *Land Use and Planning*, in its response to the Notice of Preparation (NOP) for the proposed project (see Appendix 1-2), the Merced County Regional Waste Authority (RWA), which operates the Billy Wright Landfill, indicated that it may in the future seek to expand the landfill. There are no approved expansion plans of the Billy Wright Landfill, nor has RWA formally proposed expansion of the landfill or conducted or initiated CEQA review. However, the Reduced Footprint Alternative would not preclude the landfill from expanding westward, should it pursue such a project in the future.

Construction activities and phasing would be substantially similar under the Reduced Footprint Alternative, given the similar scale of development. However, the overall duration of construction would be slightly reduced. Specifically, the following construction phases would be reduced:

- Site preparation: reduced from approximately 120 days to approximately 115 days
- Underground work: reduced from approximately 208 days to approximately 200 days
- PV system installation: reduced from approximately 208 days to approximately 200 days
- Project site restoration: reduced from approximately 21 days to approximately 20 days

On a daily basis, construction truck and worker trips would be the same as under the proposed project, although the total number of trips would be slightly reduced due to the reduced construction duration. Similarly, the construction water demand (and associated truck trips, if the well option is implemented) would be slightly reduced since less water would be needed for soil conditioning, road maintenance, dust suppression, and other uses. Specifically, it is estimated that the alternative would require approximately 357 acre-feet of water during the entire construction period, compared to 370 acre-feet under the proposed project.

The Reduced Footprint Alternative would require the same land use redesignations and rezonings as the project, including the off-site residential redesignation. However, the solar overlay would be smaller by approximately 60 acres. The size and location of the off-site residential redesignation area would be the same, although more of the site could be re-designated to medium-density residential instead of high-density residential. As is the case with the proposed project, the Reduced Footprint Alternative would not include the construction of new housing or any other type of physical development within the off-site residential redesignation area.

All other aspects of the solar project (i.e., other construction characteristics, operations, maintenance, and decommissioning) would be the same under this alternative as proposed under the project (albeit on a smaller solar project site). The proposed gen-tie line and PG&E substation improvements would be the same as the project. Additionally, the Reduced Footprint Alternative would include the establishment the off-site mitigation site as the project.

Because it would reduce the amount of ground disturbance, construction activities, and new solar development, this alternative was selected for analysis based on its potential to avoid all of the project-specific environmental impacts.

Impact Analysis

The characteristics associated with the gen-tie line, PG&E substation improvements, off-site residential redesignation, and off-site mitigation site would be the same under the Reduced Footprint Alternative as the proposed project. Therefore, impacts associated with those components of the proposed project would be the same as the proposed project. Accordingly, the

following analysis focuses on impacts associated with the solar project to determine whether the alternative's impacts would be greater than, similar to, or less than the impacts of the proposed project.

Aesthetics

The Reduced Footprint Alternative would avoid placing solar energy collection arrays on approximately 60 acres of land that is just west of the Billy Wright Landfill. This would slightly reduce the visual impact along a small segment Billy Wright Road, where roadside terrain allows for views toward the parcel that would not be developed under the Reduced Footprint Alternative. However, the alternative would still result in a change in the aesthetics of open grazing land associated with the rest of the project site, resulting in the same impacts described for the proposed project for scenic highways and scenic vistas and the same mitigation would apply. Overall, the changes in visual character and quality and changes in daytime and nighttime light and glare impacts associated with Alternative 2 would be similar to, although slightly less extensive than, the proposed project and the same mitigation would apply.

The Reduced Footprint Alternative would not reduce or avoid the project's significant impacts on aesthetics, which are related to views and scenic vistas from SR 152, a scenic highway. Overall, with project-specific mitigation, no new or substantially more severe impacts would result beyond those identified in the previous EIR.

Agricultural Resources

No Prime Farmland, Farmland of Statewide Importance, or Unique Farmland (Farmland) exists at the solar project site, and the solar project site is not subject to any Williamson Act contracts. Therefore, even though the Reduced Footprint Alternative would reduce the size of the solar overlay and the area that would be developed with solar arrays and related facilities, it would have no impact on Farmland or conflicts with Williamson Act contracts, similar to the proposed project.

As with the proposed project, the Reduced Footprint Alternative would not include construction of any new infrastructure, such as roadways or utilities, that would facilitate future growth or the conversion of off-site agricultural land to non-agricultural uses. As with the proposed project, water for construction and (to a lesser extent) operation of the Reduced Footprint Alternative would either be supplied by the San Luis Water District (SLWD) through existing connections to the solar project site or trucked to the solar project site from the AKT irrigation well located adjacent to SR 33 at the northwest corner of AKT's Mid-Cal property, approximately 4.4 miles north of the solar project site (Mid-Cal well). The method that is ultimately implemented will depend on which approvals are granted. As discussed in Section 3.19, *Utilities and Service Systems*, of this EIR, under the SLWD option, the SLWD would be required to issue a Construction Water Agreement and Solar Water Management Agreement pursuant to its Rules and Regulations, ensuring that existing agricultural users are not adversely affected. Under the well option, current withdrawals from the well for existing agricultural users would not be reduced by solar project operation under the proposed project, and irrigation would not be curtailed or reduced in any way, such that there will be no effect on agricultural production. The Reduced Footprint Alternative would require less water for construction because grading activities would be reduced, and less water for operation because there would be fewer panels to wash. Therefore, water usage under the Reduced Footprint Alternative can also be presumed to have no effect on agricultural production, similar to the proposed project.

As is the case with the proposed project, decommissioning under the Reduced Footprint Alternative would reclaim soils and areas affected by the project, bringing them back to, at a minimum, support uses for the land consistent with pre-construction activities, which consists of grazing and dry farming. Decommissioning would not lead to any changes that would result in the conversion of agricultural land to non-agricultural use. No impacts to agricultural resources would occur during decommissioning, similar to the proposed project.

Air Quality

Under the Reduced Footprint Alternative, a portion of the Project site near Billy Wright Landfill would not be developed with solar panels or BESS equipment areas. All other components of the project, including the location and size of the substation and other operational equipment, would be the same. Similarly, the general project construction area would be the same under this alternative with the exception of the portion near Billy Wright Landfill not being developed and therefore not undergoing construction. Consequently, mass emissions of air pollutants associated with the Reduced Footprint Alternative construction activities would be slightly less compared to the Project. The nearest air quality sensitive receptors to project construction would be the same under the Reduced Footprint Alternative as under the Project and would be the residential land uses located north of the northeast portion of the project site. Similarly, the nearest air quality sensitive receptors to all Project operational sources of air pollution would be the same under the Reduced Footprint Alternative as under the Project. Therefore, the construction health risk analysis and operational health risk analysis under the Project would apply to this alternative. All operational air quality impacts presented for the project would be the same for this alternative. No new or substantially more severe significant impacts would result beyond those identified in the previous EIR for the project or for the Reduced Footprint Alternative related to construction or operational air pollutant emissions with the exception of exposure to Valley Fever, which would be reduced to less than significant levels with the project-specific mitigation measure (as is the case for the proposed project). However, the Reduced Project Alternative would reduce this significant impact by reducing the amount of proposed grading.

Similarly, as is the case with the proposed project, decommissioning air pollutant emissions would not result in any new or substantially more severe significant impacts beyond those identified in the previous EIR. Finally, the off-site mitigation site would be the same under this alternative as under the Project; as was the case for the Project, no new significant impacts or substantial increases to previously identified significant impacts would result from the proposed off-site residential redesignation under this alternative as compared to those identified in the Community Plan EIR.

Biological Resources

There are six special-status species with a high likelihood for occurrence on the solar project site: golden eagle, western burrowing owl (presence confirmed during surveys), loggerhead shrike (presence confirmed during surveys) Swainson's hawk (presence confirmed during surveys), American badger, and San Joaquin kit fox. These species are assumed to be present anywhere on the site, not just in specific areas. Therefore, the alternative would not avoid the project's significant impacts on special-status species, but it would reduce the impact due to the reduced amount of temporary and permanent ground disturbance. Furthermore, as shown in Figure 3.4-3 and Figure 3.4-6 in Section 3.4, *Biological Resources*, four trees are located within the 60-acre portion of the site that would not be developed under the Reduced Footprint Alternative, including a tree where an active Swainson's hawk nest is located. Therefore, fewer trees would need to be trimmed or removed under this alternative, and a greater buffer distance would be provided between the solar project and the active Swainson's hawk

nest. This would further reduce impacts on special status species and nesting birds compared to those of the project. Similarly, because it would reduce the area that would be developed with solar arrays and related facilities, this alternative would reduce, but would not avoid, the project's significant impact on wildlife movement corridors. Impacts to wetlands or other jurisdictional waters would be the same since both the project and the alternative would avoid the potentially State jurisdictional ephemeral stream within the southeastern portion of the site (a portion of which is located within the 60-acre portion of the site that would not be developed under the Reduced Footprint Alternative).

Cultural Resources

No known historical or archaeological resources are on the solar project site. As with the proposed project, there would be a potential for construction activities under the Reduced Footprint Alternative to encounter previously unknown historical resources, archaeological resources, and human remains. However, this significant impact of the project would be reduced under the Reduced Footprint Alternative due to the reduced amount of area to be graded (the alternative would temporarily disturb approximately 1,198 acres during construction compared to 1,240 acres under the proposed project).

Energy

As with the proposed project, construction, operation, and decommissioning of the Reduced Footprint Alternative would result in the consumption of energy resources. However, these activities would likely consume less energy due to the reduced footprint and size of the proposed project under this alternative. Similar to the proposed project, the Reduced Footprint Alternative would provide a new source of clean renewable electricity, so while it would result in an increase in energy consumption compared to existing conditions, it would not result in the wasteful, inefficient, or unnecessary consumption of energy resources because it would provide an efficient and renewable source of energy in the form of solar power that would offset its operational energy use. Further, with implementation of the Reduced Footprint Alternative, PG&E would continue to pursue the procurement of renewable energy sources, consistent with state and local renewable energy and energy efficiency regulations and plans. Energy impacts under the Reduced Footprint Alternative would be slightly less than the less-than-significant energy impacts of the proposed project.

Geology, Soils, and Paleontological Resources

As with the proposed project, the Reduced Footprint Alternative is located in an area known to be subject to strong seismic ground shaking. Seismic ground shaking could damage structures at the site. Considering the area's geologic, soil, and seismic conditions, impacts of seismic ground shaking would be similar under the Reduced Footprint Alternative as under the Project. Similarly, ground-disturbing construction activities would occur, including BESS equipment areas and substation installation and construction of the gen-tie line, and the potential for erosion hazards or impacts to paleontological resources would be similar under the Reduced Footprint Alternative as under the Project. Therefore, the construction and operation geology, soil, and paleontological evaluation under the Project would apply to this alternative. All construction and operational geology, soil, and paleontological impacts presented for the project would be the same for this alternative. No new or substantially more severe significant impacts would result beyond those identified in the previous EIR for the project or for the Reduced Footprint Alternative related to construction or operational geology, soil, and paleontological resources. Impacts would be reduced to less than significant levels with the project-specific mitigation measure, similar to the proposed project.

As is the case with the proposed project, decommissioning under the Reduced Footprint Alternative may involve soil disturbance. However, with implementation of BMPs, there would be no substantial soil erosion or loss of topsoil. Decommissioning would restore the site to its pre-construction (i.e., vacant) condition. Therefore, decommissioning would not result in substantial adverse effects, including risks involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, or landslides, and the risk associated with expansive soils would be reduced. Similar to the proposed project, substantial grading and excavations during decommissioning have potential to damage paleontological resources. Impacts would be reduced to less than significant levels with the project-specific mitigation measure. This alternative would reduce but would not avoid the project's significant impacts related to exposing structures to seismic risk and hazards.

Greenhouse Gas Emissions (GHG)

Under the Reduced Footprint Alternative, a portion of the Project site near Billy Wright Landfill would not be developed with solar panels or BESS equipment areas. All other components of the project, including the location and size of the substation and other operational equipment, would be the same. Similarly, the general project construction area would be the same under this alternative with the exception of the portion near Billy Wright Landfill not being developed and therefore not undergoing construction. Consequently, mass emissions of greenhouse gases associated with the Reduced Footprint Alternative construction activities would be slightly less compared to the Project. The operational greenhouse gas analysis under the Project would apply to this alternative. All construction and operational greenhouse gas impacts presented for the project would be the same for this alternative. No new or substantially more severe significant impacts would result beyond those identified in the previous EIR for the project or for the Reduced Footprint Alternative related to construction or operational greenhouse gas emissions.

Similarly, as is the case with the proposed project, decommissioning greenhouse gas emissions would not result in any new or substantially more severe significant impacts beyond those identified in the previous EIR. Finally, the off-site mitigation site would be the same under this alternative as under the Project; as was the case for the Project, no new significant impacts or substantial increases to previously identified significant impacts would result from the proposed off-site residential redesignation under this alternative as compared to those identified in the Community Plan EIR.

Hazards and Hazardous Materials

As with the proposed project, construction, operation, and decommissioning of the Reduced Footprint Alternative would result in hazards and hazardous materials impacts. However, under the Reduced Footprint Alternative, a portion of the Project site near Billy Wright Landfill would not be developed with solar panels or BESS equipment areas, therefore impacts related to hazards for the public or environment due to the routine transport, use, or disposal of hazardous materials; a release of hazardous materials would be slightly reduced as less hazardous materials would be used during construction, operation and decommissioning since approximately 60 acres would be removed from the proposed solar project footprint and remain as vacant grassland. The construction, operational and decommissioning hazards and hazardous materials analysis under the proposed project would apply and be similar to this alternative for impacts related to the emission or handling of hazardous materials within 0.25 mile of a school; development on a site included on a list of hazardous materials sites (e.g., Cortese List); interference with an adopted emergency

response or evacuation plan; and/or exposure to a risk of injury or loss from wildfire since all other components of the proposed project, including the location and size of the substation and other operational equipment, would remain the same. Therefore, the Reduced Footprint Alternative would not result in new or substantially more severe significant hazards or hazardous materials impacts beyond those identified in the previous EIR. Impacts would be reduced compared to those of the project, due to the reduced footprint of the solar arrays. Similarly, the project's significant impact related to siting industrial equipment near potential future schools would be reduced but not avoided.

Hydrology and Water Quality

Under the Reduced Footprint Alternative, approximately 60 acres would be removed from the proposed solar project footprint and remain as vacant grassland. Under this alternative, less disturbed and impervious area would be created in comparison to the proposed project, and there would be a smaller increase in temporary and permanent runoff volumes and sources of polluted runoff. The Reduced Footprint Alternative would require 357 acre-feet of water during the construction period compared to 370 acre-feet under the proposed project, reducing impacts on groundwater quality and supply under the well option. Similar to the proposed project, on- or off-site flooding, erosion, and siltation would not be anticipated to occur because of this alternative. The potential to risk release of pollutants due to project inundation is minimal to non-existent due to its geographic location. Because the Reduced Footprint Alternative has the same characteristics as the proposed project, but over a smaller site, it would similarly comply with the Basin Plan and GSP.

All other aspects of the solar project (i.e., other construction characteristics, operations, maintenance, and decommissioning) would be the same under this alternative as proposed under the project, but for the smaller project area. In addition, the off-site mitigation site and off-site residential redesignation area would be the same under this alternative as under the proposed project. In sum, impacts to hydrology and water quality would be reduced compared to those of the project due to the reduced area of disturbance. This alternative would reduce but not avoid the project's significant impact related to surface and groundwater quality degradation.

Land Use and Planning

Unlike the proposed project, the Reduced Footprint Alternative would not preclude the Billy Wright landfill from expanding westward, should the RWA pursue such a project in the future. However, all other components of the project (i.e., construction, operation, and decommissioning of the solar project), would be the same, just slightly reduced. As with the proposed project, there are no existing residential uses on the project site; thus, the Reduced Footprint Alternative would not physically divide or disrupt an established community and would not reduce existing access for adjacent properties surrounding the project site.

Like the proposed project, the Reduced Footprint Alternative would include the development of a solar facility, which would not be consistent with the existing land use designations under the General Plan, as well as zoning designations under the County's Zoning Code. In order to accommodate the solar facility development, the Reduced Footprint Alternative would require an amendment to the County General Plan, Community Plan, an associated Zone Change and Utility-Scale Solar Overlay Zone, covering the solar project site, similar to the proposed project. With the General Plan, Community Plan and Zoning Code amendments, the Reduced Footprint Alternative would be generally consistent with the County's General Plan, and the Community Plan policies. However, implementation of mitigation measures identified throughout this EIR would ensure

consistency with the General Plan and Community Plan policies adopted for the purposes of avoiding or mitigating an environmental effect. Therefore, Reduced Footprint Alternative impacts related to land use would be less than significant with project-specific mitigation measures, and similar to those of the proposed project. This alternative would reduce but would not avoid the project's significant impacts related to conflicts with County General Plan and Community Plan policies adopted for the purpose of avoiding or mitigating an environmental effect.

Mineral Resources

Similar to the project, the County General Plan EIR does not identify any known significant sand or gravel resources within the project site. However, State-mapped mineral resource zones are present on the solar project site, the PG&E substation area, and the off-site mitigation site. Under this alternative, the solar project would permanently disturb approximately 31.6 acres through installation of solar arrays and related facilities (compared to 32.77 acres under the proposed project) and would temporarily disturb approximately 1,198 acres during construction (compared to 1,240 acres under the proposed project). Therefore, the Reduced Footprint Alternative would result in slightly reduced impacts to known mineral resources that would be of value to the region and the residents of the state than the project.

Noise

Under the Reduced Footprint Alternative, a portion of the Project site near Billy Wright Landfill would not be developed with solar panels or BESS equipment areas. All other components of the project, including the location and size of the substation and other operational equipment, would be the same. Similarly, the general project construction area would be the same under this alternative with the exception of the portion near Billy Wright Landfill not being developed and therefore not undergoing construction. The nearest noise sensitive land uses to project construction would be the same under the Reduced Footprint Alternative as under the Project and would be the residential land uses located north of the northeast portion of the project site. Similarly, the nearest noise sensitive land uses to all Project operational sources of noise, including the BESS equipment areas the substation and the gen tie line, would be the same under the Reduced Footprint Alternative as under the Project. Therefore, the construction noise evaluation and operational noise evaluation under the Project would apply to this alternative. All construction and operational noise impacts presented for the project would be the same for this alternative. No new or substantially more severe significant impacts would result beyond those identified in the previous EIR for the project or for the Reduced Footprint Alternative related to construction or operational noise with the exception of emergency generator testing noise, which would be reduced to less than significant levels with the project-specific mitigation measure (as is the case for the proposed project). Because this impact is related to proximity to the residential uses to the north, it would be the same under the Reduced Footprint Alternative.

Similarly, as is the case with the proposed project, decommissioning noise (which would be similar to project construction noise) would not result in any new or substantially more severe significant impacts would result beyond those identified in the previous EIR. Finally, the off-site mitigation site would be the same under this alternative as under the Project; as was the case for the Project, no new significant impacts or substantial increases to previously identified significant impacts would result from the proposed off-site residential redesignation under this alternative as compared to those identified in the Community Plan EIR.

Population and Housing

Similar to the proposed project, it is likely that construction and decommissioning workers for the Reduced Footprint Alternative would be drawn from local areas within the county. It is unlikely that construction workers would permanently relocate to the area for temporary employment. Therefore, impacts on population and housing during construction and decommissioning would be similar to those under the proposed project.

The Reduced Footprint Alternative would not result in the construction of any residential units and therefore would not result in a direct increase in population. The alternative would have the same or a substantially similar number of operation and maintenance workers travelling to the site as the proposed project, and the workers would most likely be drawn from the local workforce. Roads constructed as part of the Reduced Footprint Alternative would be limited to an internal road network necessary for maintenance and operation of the solar facility and would not connect to urban areas in a way that would facilitate a population increase. As with the proposed project, the solar project would not extend electric distribution infrastructure to new areas in a way that would facilitate development and an increase in population. Therefore, impacts on population and housing during operation would be similar to those under the proposed project.

Public Services

Similar to the proposed project, it is likely that construction and decommissioning workers for the Reduced Footprint Alternative would be drawn from local areas within the county. It is unlikely that construction workers would permanently relocate to the area for temporary employment. Therefore, impacts related to the need for new or physically altered governmental facilities as well as impacts to service ratios, response times, or other performance objectives during construction and decommissioning would be similar to those under the proposed project.

The Reduced Footprint Alternative would not result in the construction of any residential units and therefore would not result in a direct increase in the service population for public services or impact service ratios, response times, or other performance objectives. The alternative would have the same or a substantially similar number of operation and maintenance workers travelling to the site as the proposed project, and the workers would most likely be drawn from the local workforce. Therefore, impacts on public services during operation would be similar to those under the proposed project.

Recreation

Impacts on recreational resources under the Reduced Footprint Alternative would be substantially similar to the recreation impacts described for the project. Similar to the proposed project, it is likely that construction and decommissioning workers for the Reduced Footprint Alternative would be drawn from local areas within the county. It is unlikely that construction workers would permanently relocate to the area for temporary employment and would therefore already be factored into existing park and recreation use estimates. Therefore, impacts related to the use of existing neighborhood and regional parks or other recreational facilities during construction and decommissioning would be similar to those under the proposed project.

The Reduced Footprint Alternative would not result in the construction of any residential units and therefore would not result in a direct increase in new residents whose use of existing neighborhood and regional parks or other recreational facilities could result in the physical deterioration of these facilities. The alternative would have the same or a substantially similar number of operation and

maintenance workers travelling to the site as the proposed project, and the workers would most likely be drawn from the local workforce and factored into existing park and recreation use estimates. Therefore, impacts on recreational facilities during operation would be similar to those under the proposed project.

Transportation/Traffic

The transportation impacts under the Reduced Footprint Alternative would be substantially similar to the transportation impacts described for the project. As described for the project, conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities would not occur under the Reduced Footprint Alternative because the number of additional trips would be temporary during construction and decommissioning and minor during operations, and the additional trips would not interfere with public transit service or bicycle and pedestrian facilities. Thus, impacts of the Reduced Footprint Alternative would be similar, but slightly less than the project given its smaller size and slightly reduced scale of construction.

Regarding VMT, the Reduced Footprint Alternative would also qualify as a “Small Project,” similar to the project, and would therefore be below OPR’s screening criteria. VMT impacts of the Reduced Footprint Alternative would be similar to the project.

The Reduced Footprint Alternative would not substantially increase hazards due to a geometric design feature or incompatible uses or result in inadequate emergency access because it would also implement a CTCP similar to the project’s CTCP during construction and decommissioning. With implementation of the CTCP, potential traffic conflicts on SR 152 would be addressed and emergency access maintained. Thus, impacts of the Reduced Footprint Alternative would be similar, but slightly less than the project given its smaller size and slightly reduced scale of construction.

Operation of the alternative would also not substantially increase hazards due to a geometric design feature or incompatible use or result in inadequate emergency access because the daily trips generated by the alternative would be very minor in comparison to the average daily traffic of the roadways near the project site, avoiding additional safety hazards and maintaining emergency access. Therefore, safety and emergency access impacts would be similar to the project.

Tribal Cultural Resources

No known tribal cultural resources are on the solar project site. As with the proposed project, there would be a potential for construction activities under the Reduced Footprint Alternative to encounter previously unknown tribal cultural resources. However, this significant impact of the project would be reduced under the Reduced Footprint Alternative due to the reduced amount of area to be graded (the alternative would temporarily disturb approximately 1,198 acres during construction compared to 1,240 acres under the proposed project).

Utilities

The utilities impact under the Reduced Footprint Alternative would be less than the utilities impacts described for the Project. The Reduced Footprint Alternative would reduce the solar project component footprint by approximately 60 acres. All other components of the project, including the location and size of the substation and other operational equipment, would be similar to the proposed project. Because a portion of the solar project site near Billy Wright Landfill would not be

developed with solar panels or BESS equipment areas, water and solid waste impacts would be reduced under this alternative for the reasons discussed below. Neither the project nor the alternative would generate wastewater; therefore, wastewater impacts would be the same.

Water supply impacts under this alternative would be reduced for construction-related activities, as less water would be required for dust control because of the reduced amount of grading. During the operational phase, less water would be used as fewer solar panels would need to be washed. With respect to solid waste, the proposed project's significant and unavoidable impact is primarily driven by decommissioning in 2060, because the county's solid waste capacity after 2054 is currently unknown. Under this alternative, this impact would be reduced as there would be fewer solar panels and equipment to decommission in 2060, and less waste generated. However, the impact would not be avoided because the county's solid waste capacity after 2054 remains unknown. All other utilities including storm water drainage, electric power, natural gas, or telecommunications facilities impacts would be similar to the proposed project. The Reduced Project Alternative would therefore have reduced impact on utilities and service systems, but it would not avoid the project's significant and unavoidable impact on landfill capacity.

Wildfire

Like the proposed project, construction, operation, and decommissioning activities associated with the proposed solar facility under the Reduced Footprint Alternative are anticipated to have minimal potential to affect wildfire risks; however, construction of the solar project would temporarily increase the wildfire risk in the project vicinity by introducing construction equipment and personnel along existing rights-of-way and private roadways. The introduction of construction personnel and equipment in shoulder areas along public and private roadways would increase the potential for unintentional ignition of roadside vegetation. However, current activities undertaken by State and local agencies, such as prescribed burning and construction, are expected to follow fire management goals and policies set forth by the County General Plan, requirements of the California Building Standards Code, and all other applicable fire and safety policies or regulations set forth in the regulatory setting of the wildfire section, above, to minimize risk of wildfire. Compliance with these established goals, policies, and requirements would reduce potential impacts related to wildfire risks and the pollutants associated with wildfire under the Reduced Footprint Alternative.

Operation of the Reduced Footprint Alternative would use the same number of lithium-ion (Li-ion) batteries as the proposed project, which have flammable properties, and therefore, can pose a fire risk. Similar to the proposed project, the Reduced Footprint Alternative would require implementation of mitigation measures WF-3a and WF-3b to reduce impacts associated with construction and operation of the proposed solar facility, specifically those related to the Li-ion battery, to less than significant levels. Therefore, Reduced Footprint Alternative impacts related to wildfire would be less than significant with project-specific mitigation measures, and similar to those of the proposed project.

Cumulative Impacts

Aesthetics

The Reduced Footprint Alternative would slightly reduce the visual impact of the project by not developing approximately 60 acres of land west of Billy Wright Landfill. However, even though the size of the solar project would be slightly reduced under this alternative, it would still result in

development on open agricultural fields, which would affect scenic vista views, views from designated scenic routes, and result in substantial changes in light and glare. The Reduced Footprint Alternative would result in a considerable contribution to cumulative aesthetic impacts. Implementation of project-specific Mitigation Measure AES-1 would reduce the Alternative's contribution to significant cumulative impacts, however, similar to the proposed project, the cumulative impact would remain significant and unavoidable, and the Alternative's contribution would remain cumulatively considerable. The Reduced Footprint Alternative would not avoid the significant and unavoidable cumulative aesthetic impacts identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be the same as those of the proposed project.

Agricultural Resources

The Reduced Footprint Alternative would reduce the size of the project, and would have no impact on Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Williamson Act contracts, as such lands do not exist on the project site, similar to the proposed project. In addition, the site would be restored to its existing conditions to allow for continued grazing and dry-land farming at the end of its use as a solar farm, approximately 35 years in the future. Therefore, the Reduced Footprint Alternative would not result in a considerable contribution to the loss of agricultural land within the San Joaquin Valley, and would result in a less than significant cumulative impact. As such, the Reduced Footprint Alternative would result in the same cumulative impact identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Air Quality

Under the Reduced Footprint Alternative, a portion of the project site near the landfill would not be developed with solar equipment, and consequently, mass emissions of air pollutants during project construction would be slightly less than the proposed project. However, all other project components would be the same as the proposed project, resulting in similar construction and operational impacts, including those related Valley Fever. Therefore, the Reduced Footprint Alternative would have a less than significant cumulative impact. As such, the Reduced Footprint Alternative would result in the same cumulative impact identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Biological Resources

The Reduced Footprint Alternative would slightly reduce impacts on biological resources by not developing approximately 60 acres of land west of Billy Wright Road. Avoiding development within this 60-acre area would also reduce impacts on an active Swainson's hawk nest located on the southern edge of the proposed project footprint by reducing potential construction noise impacts on this nest during the nesting season. However, even though the size of the solar project would be slightly reduced under this alternative, it would still result in development on open agricultural fields, which would impact special-status species, nesting birds, wildlife movement, and potential state jurisdictional waters. The Reduce Footprint Alternative would result in a considerable contribution to cumulative biological resources impacts. Implementation of project-specific mitigation measures would reduce the Alternative's contribution to significant cumulative impacts; however, the cumulative impact would remain significant and unavoidable, and the Alternative's contribution would remain cumulatively considerable. The Reduced Footprint Alternative would not

avoid the significant and unavoidable cumulative biological resources impacts identified for the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be the same as those of the proposed project.

Cultural Resources

Under the Reduced Footprint Alternative, a portion of the project site near the landfill would not be developed with solar equipment, and consequently, the amount of ground-disturbing activities that could encounter cultural resource during project construction would be slightly less than the proposed project. However, all other project components would be the same as the proposed project, resulting in similar less-than-significant impacts on cultural resources with implementation of project mitigation measures. Therefore, the Reduced Footprint Alternative would have a less than significant cumulative impact. As such, the Reduced Footprint Alternative would result in the same cumulative impact identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Energy

Construction, operation, and decommissioning activities under the Reduced Footprint Alternative would result in less energy consumption than the proposed project due to the reduced footprint and size of the project under this alternative. The Reduced Footprint Alternative, as well as other identified solar projects in the County, would be used primarily to generate a new source of renewable energy in the form of solar power, which would ultimately help facilitate the delivery of clean, renewable electricity to existing PG&E customers to meet demand and decrease reliance on non-renewable sources of energy. Therefore, it is anticipated that future energy users will become more energy efficient and less wasteful over time, and will not create significant cumulative energy impacts. Because a significant cumulative energy impact would not result under cumulative conditions, the Reduced Footprint Alternative would not contribute to a cumulative impact. Therefore, the cumulative impact would be less than significant. As such, the Reduced Footprint Alternative would result in the same cumulative impact identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Geology and Soils

The Reduced Footprint Alternative is located in an area known to be subject to strong seismic ground shaking, and seismic ground shaking could damage structures at the site. Considering the area's geologic, soil, and seismic conditions, impacts of seismic ground shaking would be similar under the Reduced Footprint Alternative as under the Project. Similarly, ground-disturbing construction activities would occur, and the potential for erosion hazards or impacts to paleontological resources would be similar under the Reduced Footprint Alternative as under the Project. Therefore, the construction and operation impacts presented for the project would be the same for this alternative. However, with implementation AMMs/BMPs, and compliance with CPUC general orders and Merced County building codes, impacts related to seismic ground shaking and paleontological resources would be reduced. Therefore, the cumulative impact would be less than significant. As such, the Reduced Footprint Alternative would result in the same cumulative impact identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Greenhouse Gas Emissions

Under the Reduced Footprint Alternative, a portion of the project site near the landfill would not be developed with solar equipment, and consequently, mass emissions of greenhouse gases during project construction would be slightly less than the proposed project. However, all other project components would be the same as the proposed project, resulting in similar construction and operational impacts, including the long-term net reduction in greenhouse gas emissions. Therefore, the Reduced Footprint Alternative would not result in a long-term contribution to cumulative GHG impacts. As such, the Reduced Footprint Alternative would result in the same cumulative impact identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Hazards and Hazardous Materials

Under the Reduced Footprint Alternative, a portion of the project site near Billy Wright Landfill would not be developed with solar equipment, therefore, impacts related to hazards for the public or environment due to the routine transport, use, or disposal of hazardous materials, and the accidental release of hazardous materials would be slightly reduced as less hazardous materials would be used during construction, operation and decommissioning activities. However, since all other project components, including the location and size of the substation and other operational equipment, would remain the same as the proposed project under this alternative, the construction, operational and decommissioning hazards and hazardous materials impacts would remain the same. Nonetheless, with implementation BMPs, and compliance with applicable federal, state, and local requirements regarding hazardous materials, impacts would be reduced. Therefore, the cumulative impact would be less than significant. As such, the Reduced Footprint Alternative would result in the same cumulative impact identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Hydrology and Water Quality

Under the Reduced Footprint Alternative, a portion of the project site near the landfill would not be developed with solar equipment, and consequently, there would be less disturbed and impervious areas created, smaller increases in temporary and permanent runoff volumes, and less water used during project construction in comparison to the proposed project. However, all other project components would be the same as the proposed project, resulting in similar impacts related to the risk of release of pollutants and compliance with the Basin Plan and GSP. Therefore, the Reduced Footprint Alternative would have no cumulative impact on hydrology and water quality. As such, the Reduced Footprint Alternative would result in the same cumulative impact, although to a reduced extent, identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Land Use and Planning

The Reduced Footprint Alternative would not preclude the Billy Wright landfill from expanding westward, should the RWA pursue such a project in the future, unlike the proposed project. However, all other components of the project, would be the same, just at a slightly reduced scale. The Reduced Footprint Alternative would not physically divide an established community, and would be generally consistent with the 2030 Merced County General Plan and the Villages of Laguna San Luis Community Plan, similar to the proposed project. Implementation of mitigation measures would ensure consistency with the County's General Plan and Community Plans adopted for the purpose of avoiding or mitigating an environmental effect. Like the proposed project, the Reduced Footprint Alternative would not be urban development, and, following the expiration of the CUP for

the project, the site would be returned to its existing state. Therefore, the Reduced Footprint Alternative would not contribute to a significant cumulative land use impact. As such, the Reduced Footprint Alternative would result in the same cumulative impact, identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Mineral Resources

Under the Reduced Footprint Alternative, a portion of the project site near the landfill would not be developed with solar equipment, and consequently, would result in less disturbed areas and impacts to mineral resources in comparison to the proposed project. However, all other project components would be the same as the proposed project, resulting in similar impacts. Nonetheless, ample mineral resources have been identified in the County, and therefore, there would be no cumulative impact on mineral resources. The Reduced Footprint Alternative would not contribute to a cumulative impact, and would have no cumulative impact on mineral resources similar to the proposed project, as discussed in more detail in Chapter 5, *Other CEQA Considerations*. Impacts would be the similar to those of the proposed project, although slightly reduced.

Noise

Under the Reduced Footprint Alternative, a portion of the project site near Billy Wright Landfill would not be developed with solar panels or BESS equipment areas, thereby slightly reducing the general project construction area. However, all construction and operational noise impacts presented for the project would be the same for this alternative, including impacts to the nearest noise sensitive land uses during project construction and operation. Therefore, the Reduced Project Alternative would have less than significant impacts on noise, and the cumulative impact would be less than significant. As such, the Reduced Footprint Alternative would result in the same cumulative impact identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Population and Housing

The Reduced Footprint Alternative would have the same or substantially similar number of temporary construction employees and permanent operational employees as the proposed project. The Reduced Footprint Alternative would not include housing units, would not displace any existing housing, and would not directly or indirectly induce population growth in the region. Therefore, the Reduced Footprint Alternative, when combined with reasonably foreseeable projects, would not contribute to a cumulatively significant impact regarding population and housing. As such, the Reduced Footprint Alternative would result in the same cumulative impact identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Public Services

The Reduced Footprint Alternative would have the same or substantially similar number of temporary construction employees and permanent operational employees as the proposed project, and would not include housing units. Therefore, the construction, operation, and decommissioning of the solar project, PG&E substation improvements, and off-site mitigation site would not result in the need for new or physically altered public services facilities. As such, the Reduced Footprint Alternative, when combined with reasonably foreseeable projects, would not contribute to a cumulatively significant impact with regard to public services. The Reduced Footprint Alternative would result in the same cumulative impact identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Recreation

The Reduced Footprint Alternative would have the same or substantially similar number of temporary construction employees and permanent operational employees as the proposed project and would not include housing units. Therefore, the construction, operation, and decommissioning of the solar project, PG&E substation improvements, and off-site mitigation site would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration would occur or be accelerated. As such, the Reduced Footprint Alternative, when combined with reasonably foreseeable projects, would not contribute to a cumulatively significant impact with regard to recreational resources. The Reduced Footprint Alternative would result in the same cumulative impact identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Transportation/Traffic

Under the Reduced Footprint Alternative, transportation impacts would be similar to those of the proposed project, although slightly reduced, as a result of the smaller size and scale of the project. Similar to the proposed project, conflicts with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities would not occur under the Reduced Footprint Alternative because the number of additional trips would be temporary during construction and decommissioning and minor during operations, and the additional trips would not interfere with public transit service or bicycle and pedestrian facilities. In addition, the Reduced Footprint Alternative would also qualify as a “Small Project,” similar to the proposed project, and would therefore be below OPR’s screening criteria for VMT. Therefore, the Reduced Footprint Alternative would not contribute to a cumulative impact related to transportation or traffic. The cumulative impact would be less than significant. As such, the Reduced Footprint Alternative would result in the same cumulative impact, although to a reduced extent, identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Tribal Cultural Resources

Under the Reduced Footprint Alternative, a portion of the project site near the landfill would not be developed with solar equipment, and consequently, the amount of ground-disturbing activities that could encounter tribal cultural resource during project construction would be slightly less than the proposed project. However, all other project components would be the same as the proposed project, resulting in similar less-than-significant impacts on tribal cultural resources with implementation of project mitigation measures. Therefore, the Reduced Footprint Alternative would have a less than significant cumulative impact. As such, the Reduced Footprint Alternative would result in the same cumulative impact identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Utilities

Under the Reduced Footprint Alternative, the impact on utilities would be slightly reduced, as compared to the proposed project, because the footprint would be reduced by approximately 60 acres. Because a portion of the solar project site near Billy Wright Landfill would not be developed with solar equipment, water and solid waste impacts would be reduced under this alternative. All other components of the project, including the location and size of the substation and other operational equipment, would be similar to the proposed project. As such, the Reduced Footprint

Alternative, in addition to other cumulative projects, would not contribute to a cumulative impact on wastewater treatment, water supply, storm water drainage, natural gas, or telecommunication facilities.

Under the Reduced Footprint Alternative, the impact on solid waste would be reduced, as fewer solar panels and equipment would be decommissioned in 2060, and consequently, less waste would be generated. However, the impact would not be avoided because the County's solid waste capacity after 2054 remains unknown. Therefore, the Reduced Foot Alternative would result in operational impacts that would be significant and unavoidable, and would contribute to a significant cumulative impact. As such, the Reduced Footprint Alternative would result in the same cumulative impact identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Wildfire

Construction, operation, and decommissioning activities associated with the proposed solar facility under the Reduced Footprint Alternative are anticipated to have minimal potential to affect wildfire risks; however, construction of the solar project would temporarily increase the wildfire risk in the project vicinity by introducing construction equipment and personnel along existing rights-of-way and private roadways increasing the potential for unintentional ignition of roadside vegetation. However, current activities undertaken by State and local agencies, and compliance with the requirements of the California Building Standards Code, and all other applicable fire and safety policies or regulations would reduce potential impacts related to wildfire risks and the pollutants associated with wildfire.

Similar to the proposed project, operation of the Reduced Footprint Alternative would use the same number of Li-ion batteries, which have flammable properties and can pose a fire risk. Implementation of mitigation measures WF-3a and WF-3b would reduce impacts associated with construction and operation of the proposed solar facility, specifically those related to the Li-ion battery, to less than significant levels. Similar practices can be assumed for foreseeable solar projects in the area. Consequently, wildfire impacts as a result of the Reduced Footprint Alternative, in combination with other reasonably foreseeable future projects, would not be cumulatively considerable. As such, the Reduced Footprint Alternative would result in the same cumulative impact identified for the proposed project, and as discussed in more detail in Chapter 5, *Other CEQA Considerations*.

Potential Feasibility

This alternative is potentially feasible because it would maintain a sufficient number of solar arrays to meet the project objectives. Furthermore, this alternative would meet all of the project objectives.

4.3.3 Environmentally Superior Alternative

CEQA requires an EIR to examine a range of feasible alternatives to the project. CEQA Guidelines Section 15126.6(e)(2) requires that the EIR identify which of those alternatives is the environmentally superior alternative. If the No-Project Alternative is the environmentally superior alternative, then CEQA requires an EIR to identify which of the other alternatives is the environmentally superior alternative.

Based on the assessment included within this chapter, the Reduced Footprint Alternative is considered the Environmentally Superior Alternative. This alternative would reduce the area available to locate solar panels in the southern portion of the solar project site that abuts the Billy Wright Landfill by approximately 60 acres. Because of the reduced amount of temporary and permanent ground disturbance, and the reduced scale of construction activities, this alternative would reduce, but would not avoid, the project's significant impacts on air quality, biological resources, cultural resources, geology and soils, hydrology and water quality, water supply, and tribal cultural resources. Because of the reduced number of solar arrays, this alternative would reduce, but would not avoid, the project's significant impacts on hazards and hazardous materials, land use and planning, water supply, solid waste, and wildfire. The only significant impact of the project that would not be reduced under this alternative is the impact on aesthetics, since that impact would occur in the northern portion of the project site. Like the project, this alternative would still have a significant and unavoidable impact on landfill capacity, due to the waste that would be generated in 2060 during decommissioning of the solar project, but the significant impact would be reduced. In sum, impacts in 12 resource areas would be reduced under the Environmentally Superior Alternative, including 9 of the significant impacts that would occur under the project.

Table 4-1 provides an overview of the potential differences in the level of impacts under the alternatives considered in this EIR.

Table 4-1. Comparison of Alternative Impacts to the Proposed Project

	Level of Significance Community Plan (with mitigation)	Proposed Project New or Substantially More Severe Significant Impacts (with mitigation)?	Alternative 1: No Project Impacts Would Be	Alternative 2: Reduced Size Impacts Would Be
Aesthetics	SU	no	Reduced*	Similar
Agricultural Resources	SU	no	Similar	Similar
Air Quality	SU	no	Reduced*	Reduced*
Biological Resources	LTS	no	Reduced*	Reduced*
Cultural Resources	LTS	no	Reduced*	Reduced*
Energy	LTS	no	Reduced	Reduced
Geology, Soils, Mineral Resources, and Paleontological Resources	LTS	no	Reduced*	Reduced*
Greenhouse Gas Emissions (GHG)	LTS	no	Increased	Reduced
Hazards and Hazardous Materials	LTS	no	Reduced*	Reduced*
Hydrology and Water Quality	LTS	no	Reduced*	Reduced*
Land Use and Planning	LTS	no	Reduced*	Reduced*
Mineral Resources	NI	no	Reduced	Similar
Noise	LTS	no	Reduced*	Similar
Population and Housing	LTS	no	Reduced	Similar
Public Services	LTS	no	Reduced	Similar
Recreation	LTS	no	Reduced	Similar
Transportation/Traffic	SU	no	Reduced	Reduced
Tribal Cultural Resources	LTS	no	Reduced*	Reduced*
Utilities	SU	yes	Reduced*	Reduced*
Wildfire	LTS	no	Reduced*	Similar
Cumulative Impacts	—	—	Reduced*	Similar
Summary				
Increased	—	—	One resource area	None
Reduced	—	—	19 resource areas and cumulative impacts	12 resource areas
Project-Specific Significant Impacts that Would be Reduced or Avoided (indicated by asterisk [*])	—	—	12 resource areas	9 resource areas

4.3.4 References Cited

Printed References

U.S. Department of Energy. 2010. *California 80-Meter Wind Map and Wind Resource Potential*. Available: <https://windexchange.energy.gov/maps-data/12>. Accessed: September 8, 2023

5.1 Overview

This chapter examines the project's cumulative impact contributions, potential for growth inducement, and significant unavoidable impacts.

5.2 Cumulative Impacts

The State CEQA Guidelines define a *cumulative impact* as two or more individual impacts that, when considered together, are significant or that compound or increase other significant environmental impacts. Cumulative impacts can result from individually minor, but collectively significant projects taking place over a period of time (State CEQA Guidelines Section 15355). The incremental impact of a project, although less than significant on its own, may be considerable when viewed in the cumulative context of other closely related past, present, and reasonably foreseeable probable future projects. A *cumulatively considerable* contribution to a cumulatively significant impact is considered to be *significant* from the point of view of the cumulative impact analysis.

The State CEQA Guidelines provide that cumulative context may be described through either the list approach or the plan/projections approach. The list approach involves identifying and listing the past, present, and reasonably foreseeable probable future projects that contribute to a given significant cumulative impact. The plan/projections approach relies on an adopted plan or reliable projection that describes the significant cumulative impact.

The cumulative impact analysis is limited to those significant impacts that are cumulative in origin and to which the proposed project contributes.

5.2.1 Geographic Scope

The geographic area that is analyzed for cumulative impacts depends on the resource being analyzed. The geographic area associated with the proposed project's different environmental impacts defines the boundaries of the area used for compiling the list of past, present, and probable future projects considered in the cumulative impact analysis.

Each section of this EIR considers the specific geographic area that is directly related to the individual topic being addressed within that section. For example, the analysis of air quality is based on a regional level because air quality impacts are regional in nature, whereas analysis of aesthetic impacts only consider related projects in the vicinity of the project site because of the localized nature of the impact.

5.2.2 Impact Analysis

Community Plan EIR Cumulative Impact Analysis

Community Plan EIR Sections 7.2 and 7.2.1 provide a detailed description of the cumulative background for cumulative impact analysis for buildout of the Community Plan. As described in that section of the Community Plan EIR, the EIR used the list approach of planned and proposed projects to “generate the most reliable future projections possible,” and is incorporated herein by reference. The following projects were identified in the Community Plan EIR to be evaluated as part of that cumulative analysis, as they would likely contribute to the projected growth of the County, specifically the area surrounding the City of Los Banos, and potentially contributing to cumulative impacts:

- **Solid Waste Disposal/Transfer Options for Western Merced County:** this project would involve either the expansion of the existing Billy Wright Landfill or closure of the landfill and the construction of a transfer station in the Los Banos area. Billy Wright Landfill is owned and operated by the Merced County Regional Waste Authority (RWA). As discussed in Section 3.11, *Land Use and Planning*, RWA previously evaluated expansion of the Billy Wright Landfill by approximately 50 acres along the northern boundary of the landfill in 2006 in the *Solid Waste Disposal/Transfer Option for Western Merced County Draft Environmental Impact Report* (SCH# 2003101096) (County of Merced Solid Waste Management Department 2006). However, at the time of this SEIR, there are no approved expansion plans of the Billy Wright Landfill, nor has RWA formally proposed expansion of the landfill or conducted or initiated CEQA review beyond what was conducted for the EIR mentioned previously (SCH #2003101096).
- **Santa Nella Community Specific Plan:** this project would include 6,483 residential units, approximately 5.6 million square feet of commercial/industrial uses, and the expansion of an existing golf course. At the time of this SEIR, while several tentative maps have been approved by the County, no development proposed in the community plan has been built.
- **Fox Hills Community Specific Plan:** this project would include 3,058 residential units. At the time of this SEIR, none of the development in the community plan has been built or proposed.
- **Delhi Community Plan:** this project would include 5,592 residential units and approximately 3.3 million square feet of mixed uses, commercial, industrial, and public/quasi uses. At the time of this SEIR, this Plan was amended via adoption of the Bradbury Master Plan on October 17, 2023.
- **Agua Fria Village Community Plan study area:** the project is an area within the Villages of Laguna San Luis Community Plan, and would include 3,493 residential units, and approximately 9 acres of commercial and industrial uses. At the time of this SEIR, there has been no further action taken on this project.
- **Various development projects in the City of Los Banos:** these projects include 51 development proposals that the City of Los Banos was reviewing at the time the previous EIR was prepared. The development projects ranged from residential uses to commercial land uses. Since the Community Plan EIR was certified in 2008, the City of Los Banos has grown by approximately 12,080 residents, and 2,788 residential units (Department of Finance 2012, 2023).
- **California High-Speed Rail project:** this project would include the construction of a high-speed rail train between northern and southern California, with the preferred alignment extending along SR-99 between Sacramento, Bakersfield, and communities further south. At the time of this SEIR, portions of the rail have been constructed, but are not yet operational.

In total, these cumulative projects would result in approximately 8,649 acres of development, including 18,793 residential units, 765 acres of commercial/industrial uses, and 38,924 new residents, in addition to the cumulative growth in the City of Los Banos as noted above.

Project Cumulative Impact Analysis

Since certification of the Community Plan EIR, the cumulative background analysis has changed. At the time the NOP was released in August 2021, four additional reasonably foreseeable future projects (three solar projects and one development project) were identified. These additional cumulative projects are listed in Table 5-1 and included in the cumulative impact analysis in this SEIR and shown in Figure 5-1. Consistent with the approach in the Community Plan EIR, the proposed project's cumulative analysis employs a list-based approach.

Table 5-1. Additional Cumulative Projects in Solar Project Site Vicinity

ID	Project	Project Location	Distance from the Solar Project Site	Type of Use	Size/Unit	Project Status as of March 2024
1	Parkway Project	Approximately 518 acres located within the Santa Nella Community Specific Plan on the east side of State Highway 33 between the Delta Mendota Canal and the California Aqueduct	Approximately 1 mile north	Residential	1,836 units	Construction has not commenced. Development Agreement expires on August 27, 2027.
2	Canyon Road Solar Project	Approximately 32 acres located on the west side of I-5 just north of the Los Banos Reservoir	Approximately 2.6 miles southeast	Solar Project	32 acres/generating 5 MW	Notice of Intent (NOI) to adopt an IS/MND was circulated in October 2023. Merced County Commission hearing has not yet been scheduled.
3	Zeta Solar and Battery Energy Storage System Project	Approximately 675 acres located on the east side of I-5 adjacent to the California Aqueduct and Dos Amigos Pumping Station	Approximately 12 miles south east	Solar Project	675 acres/generating 75 MW	Notice of Preparation (NOP) of a Draft EIR was circulated in July 2023. Draft EIR is being prepared.

ID	Project	Project Location	Distance from the Solar Project Site	Type of Use	Size/Unit	Project Status as of March 2024
4	Quinto II Solar Project	Approximately 1,228 acres located on the west side of I-5 between the Delta Mendota Canal and the California Aqueduct, and just north of O’Neill Forebay	Approximately 5.3 miles northwest	Solar Project	1,228 acres/generating 150 MW	Project was initially scoped for an EIR; work on the notice of preparation (NOP) for an initial study has commenced.

Source: Merced County, 2024.

The Community Plan EIR Section 7.2.2 provided a detailed description of the cumulative impacts of buildout of the Community Plan. The findings and analysis found in Section 7.2.2 of the Community Plan EIR are incorporated herein by reference. The following cumulative impacts discussion is organized by first considering the topics addressed in the Community Plan EIR and summarizing whether the Community Plan EIR identified a significant cumulative impact. Second, the cumulative analysis evaluates the proposed project’s cumulative impact when considering the impacts of the proposed project, the new cumulative projects identified in Table 5-1, and the cumulative development evaluated in the Community Plan EIR. The analysis then determines whether, based on changes to the project or changes in circumstances (including the new cumulative projects), new or substantially more severe significant cumulative impacts would occur beyond those identified in the Community Plan EIR. If a new significant cumulative impact is identified, the analysis provides the basis for and a conclusion whether the proposed project’s contribution to the new impact would be cumulatively considerable.

Aesthetics

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to aesthetic resources. Refer to the aesthetic resources discussion under Section 7.2.2, Cumulative Impact Analysis, on page 7-9 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in significant and unavoidable impacts, as the visual character of the project area, which was then (and still is) largely comprised of agricultural and open space resources, would be developed with urban uses, which would degrade the existing visual character. While buildout of the Community Plan and potential future projects would be required to comply with adopted design standards to minimize visual impacts, the amount of development proposed would result in significant aesthetic impacts. Buildout of the Community Plan would contribute to the cumulative aesthetic impact associated with the identified potential future projects in the surrounding area, thereby contributing to a cumulatively considerable cumulative impact and resulting in a significant and unavoidable cumulative impact on aesthetic resources.

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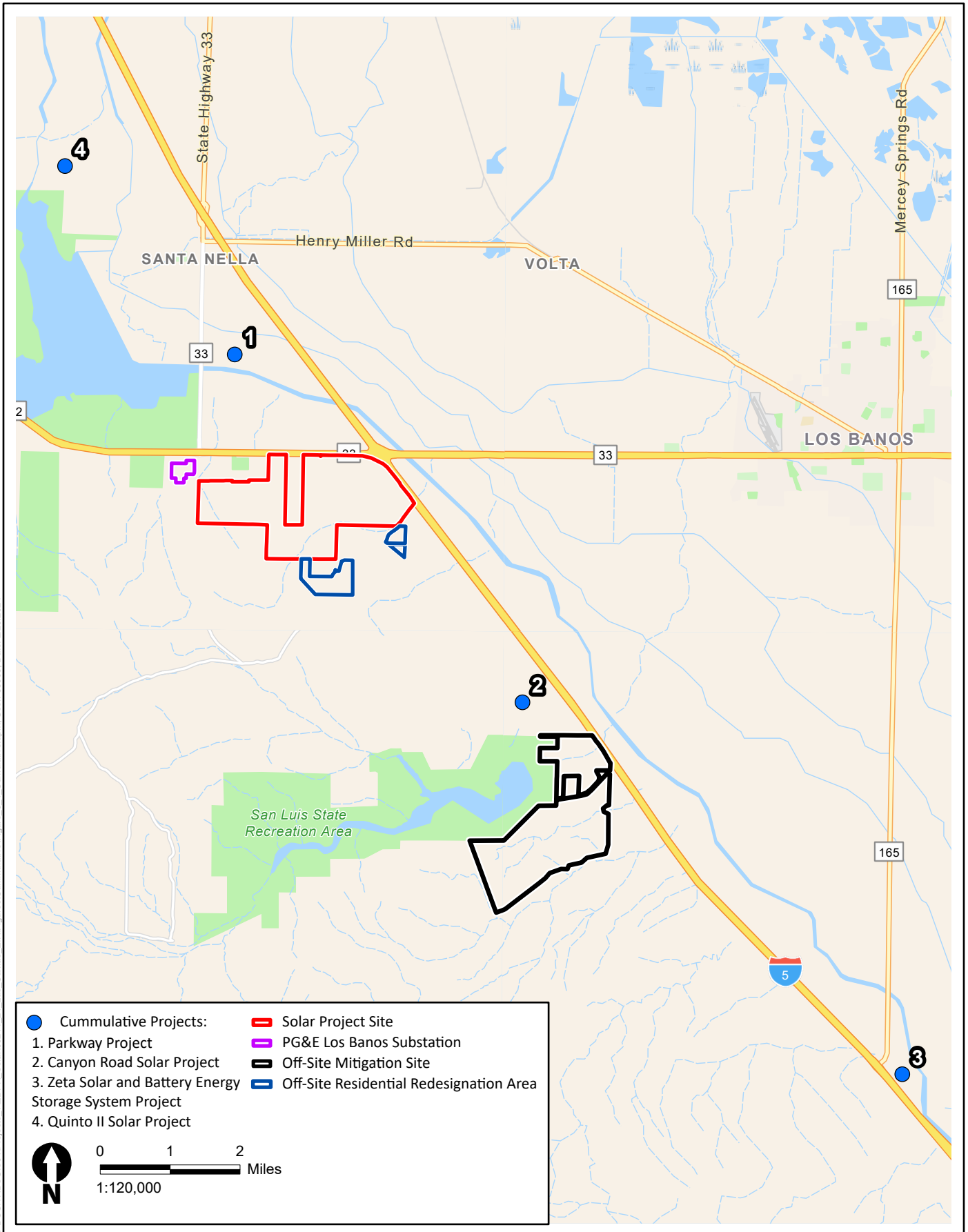


Figure 5.1
Cumulative Projects Locations in Merced County
Las Camas Solar Project - Merced County, California

Project Cumulative Impact Analysis

The area surrounding the project site is open grazing and dry-land farm land. The travelling public has largely uninterrupted views across these lands to the eastern side of the Diablo Range. Construction of the Canyon Road Solar Project (southeast of the solar project site), Zeta Solar Project (southeast of the solar project site), Quinto II Solar Project (northwest of the solar project site), and the proposed Parkway Project (north of the solar project site) would replace open agricultural fields with suburban residential, commercial, industrial, and related land uses when these areas are eventually developed. This would substantially alter the visual character of this area west of the intersection of Interstate (I)-5 and SR 152 and result in a significant cumulative impact on views west from I-5 and along SR 152 east of San Luis Reservoir. The project would contribute approximately 1,240 acres of permanent nonagricultural views to this area. However, compared to the development proposed under the Community Plan, though, operation of the solar project would be less intensive than development of the Community Plan and would better preserve views toward the hillsides within public scenic vista views. This is because the solar panels would be a lower profile than single- or multi-story residences. Nonetheless, these changes would affect scenic vista views, views from designated scenic routes, and result in substantial changes in light and glare, and would be a considerable contribution to cumulative aesthetic impacts. Implementation of project-specific Mitigation Measure AES-1 would reduce the project's contribution to significant cumulative impacts by implementing a landscape buffer along SR 152 to screen views of the solar project while maintaining kit fox passage and views of the surrounding hillsides and improving project aesthetics. However, the cumulative impact would remain significant and unavoidable, and the project's contribution would remain cumulatively considerable, consistent with the conclusion in the Community Plan EIR. Therefore, ***with project-specific mitigation, no new or substantially more severe cumulative aesthetic impacts would result beyond those identified in the previous EIR.***

Agricultural Resources

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to agricultural resources. Refer to the agricultural resources discussion under Section 7.2.2, Cumulative Impact Analysis, on page 7-10 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in significant and unavoidable impacts related to the conversion of agricultural land to non-agricultural use even with implementation of Mitigation Measure 5.11-1, which requires applicants conducting earthmoving activities on Prime Farmland, Farmland of Statewide Importance, or Unique Farmland to establish off-site conservation easements to offset the loss of on-site Farmland. Buildout of the Community Plan would contribute to the cumulative loss of farmlands associated with the identified potential future projects in the surrounding area, thereby contributing to a cumulatively considerable cumulative impact and resulting in a significant and unavoidable cumulative impact on agricultural resources.

Project Cumulative Impact Analysis

As described in Section 3.2, Agricultural Resources, there has been a trend in California toward the conversion of all types of farmland to urban or other uses. As with the other San Joaquin Valley counties, Merced County is experiencing a steady loss of important farmlands through conversion. The project would have a less-than-significant individual impact on agricultural conversion because

the project is not located on prime farmland or land that can be defined as “productive farmland” under the 2030 Merced County General Plan. Further, the site would be restored to dry-land farming at the end of its use as a solar farm, approximately 35 years in the future. For these reasons, the project would also not result in a considerable contribution to the loss of agricultural land within the San Joaquin Valley, and would result in a less than significant cumulative impact. Based on the analysis above, ***no new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation measures would be required for the proposed project.***

Air Quality

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to air quality. Refer to the air quality discussion under Section 7.2.2, Cumulative Impact Analysis, on pages 7-10 and 7-11 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in significant and unavoidable impacts related to air quality impacts associated with ozone precursors and PM₁₀ during construction, and reactive organic gases (ROG) and oxides of nitrogen (NO_x) during operation, even with implementation of Mitigation Measures 5.12-2a, 5.12-2b, and 5.12-2c. However, buildout of the Community Plan, in combination with potential future projects, would not result in cumulative air quality impacts related to the exposure of sensitive receptors to toxic air contaminants, and mobile source carbon monoxide (CO) impacts. Nonetheless, buildout of the Community Plan would contribute construction and operational emissions to the cumulative emissions associated with the identified potential future projects in the surrounding area, thereby would result in a cumulatively considerable contribution to the cumulative impact and resulting in a significant and unavoidable cumulative air quality impact.

Project Cumulative Impact Analysis

Construction and operation of the project would result in emissions of criteria air pollutants and precursors in the SJVAB, which, as explained in Section 2.2.3, *Attainment Designations*, is designated as nonattainment with respect to NAAQS and CAAQS for both ozone and PM_{2.5}, as well as CAAQS for PM₁₀ (SJVAPCD 2022). SJVAB experiences exceedances of these ambient air quality standards as a consequence of past and present projects.

Ozone impacts are the result of cumulative emissions of NO_x and ROG from numerous sources in the region and transport from outside the region. Only the largest individual sources emit NO_x and ROG in amounts that could have a measurable effect on ambient ozone concentrations. However, when all sources throughout the SJVAB are combined, they can result in severe ozone problems. Because the region is designated as nonattainment with respect to NAAQS and/or CAAQS for ozone, PM₁₀, and PM_{2.5}, emissions from cumulative development are inherently cumulative.

SJVAPCD has established mass-emission thresholds for construction and operational emissions of criteria air pollutants and precursors to determine whether a project’s discrete emissions would result in a cumulative, regional contribution (i.e., significant) to the existing nonattainment in the SJVAB. In developing mass-emission thresholds of significance to evaluate the contribution of emissions of individual projects, SJVAPCD analyzed emission values against the SJVAPCD’s offset thresholds for ozone precursors, which, when applied, would prevent further deterioration of

ambient air quality in the SJVAB. The mass-emission thresholds recommended by SJVAPCD for PM₁₀ and PM_{2.5} were adapted from the SJVAPCD's PM₁₀ New Source Review offset thresholds (SJVAPCD 2015b). Using these parameters, SJVAPCD has quantitative thresholds of significance for project-level CEQA evaluation that may be used to determine whether a project's emissions of criteria air pollutants and precursors would contribute to the regional degradation of ambient air quality within the SJVAB with respect to the NAAQS and CAAQS. SJVAPCD also directs lead agencies to consider the cumulative impact of multiple simultaneously proposed projects, located within the same area. If the combined impacts of such projects cause or worsen an exceedance of the concentration standards, the project would have a cumulatively significant impact under CEQA.

As discussed under Impact AQ-1 and Impact AQ-2, the mass emissions of ozone precursors (i.e., ROG and NO_x), PM₁₀, and PM_{2.5} associated with project construction and operation, respectively, would not exceed the SJVAPCD-recommended mass-emission thresholds and, therefore, would not contribute to the nonattainment status for ozone, PM₁₀, nor PM_{2.5} in the SJVAB, result in greater acute or chronic health impacts compared to existing conditions, nor conflict with air-quality planning efforts. When evaluating the project's emissions of criteria air pollutants and precursors against SJVAPCD's thresholds of significance, it is not foreseeable that the health complications associated with exposure to ozone, PM₁₀, or PM_{2.5} would be exacerbated by the project. One potential cumulative project, the Parkway Project, was identified for purposes of the CEQA analysis. The Parkway Project is an approved Development Agreement for 1,836 residential units within Santa Nella Community Specific Plan, approximately one mile north of the solar project site. Construction of the Parkway Project has not commenced. The Development Agreement expires in August 2027. As such, it is not anticipated that the Parkway Project will be constructed concurrently with the proposed project. Therefore, there would be no simultaneously proposed projects located within the same area as the project during project construction, and the cumulative impact is less than significant. ***No new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation measures would be required for the proposed project.*** Also, as explained in Impact AQ-7, the project would not conflict with clean-air planning efforts in the SJVAB.

As stated under Impact AQ-3, given that the solar project would be visited by up to eight daily maintenance and inspection personnel, and would include up to 20 parking spaces for personnel, contractors, and delivery vehicles, the project would not generate a number of vehicle trips that could cause, or contribute in any meaningful way, to traffic congestion or any operational deficiencies at any area intersections. Therefore, the project would not add a substantial amount of traffic to any congested intersection such that it, in combination with traffic generated by other reasonably foreseeable projects, would result in an exceedance of NAAQS or CAAQS for CO under future conditions. This would especially be the case because CO emissions from motor vehicles are expected to continue to decrease as emission standards improve and more electric vehicles enter the statewide fleet. For these reasons, the cumulative impact is less than significant. ***No new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation measures would be required for the proposed project.***

As described in Section 8.8.6 of SJVAPCD's *Guidance for Assessing and Mitigating Air Quality Impacts*, the project-level thresholds for TACs noted under Impact AQ-3 also apply as cumulative-level thresholds for TACs. As discussed under Impact AQ-4, TAC emissions associated with construction and operation of the project would not result in a substantial increase in health-risk exposure at offsite sensitive receptors, increases in cancer risk greater than 20 in 1 million, or a hazard index greater than 1. An HRA was conducted to examine the project's construction and operations-related TAC emissions in

accordance with SJVAPCD guidance to determine the incremental increase in health-risk exposure at offsite sensitive receptors. The results of the HRA indicate that, at the point of maximum impact, the level of cancer risk would be 0.6 in 1 million, and the hazard index for long-term chronic risk would be 0.0005. These levels of health risk would not exceed SJVAPCD's incremental increase threshold for cancer risk of 20 in 1 million, nor its threshold for chronic risk (i.e., a hazard index greater than 1.0). Consequently, the cumulative impact is less than significant. ***No new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation measures would be required for the proposed project.***

As discussed under Impact AQ-5, implementation of Mitigation Measure AQ-1 during project construction would minimize the potential for offsite receptors to become exposed to fugitive dust containing spores of the *Coccidioides immitis* fungus, which cause Coccidioidomycosis, more commonly known as Valley Fever. Valley Fever is a localized, rather than regional, pollutant. No other reasonably foreseeable dust-generating projects have been identified in the project vicinity. For these reasons, the cumulative impact is less than significant. Therefore, ***with project-specific mitigation, no new or substantially more severe cumulative air quality impacts related to fugitive dust emissions and Valley Fever would result beyond those identified in the previous EIR.***

As discussed under Impact AQ-6, emissions of odorous diesel exhaust during project construction and operations would not be generated in any specific location on the project site for an extended period (including those parts of the project site near offsite residences) and would dissipate with distance. Also, the project would not be one of the odor-generating project types for which SJVAPCD recommends specific set-back distances (i.e., wastewater-treatment facility, landfill, solid waste-transfer station, composting facility, refinery, chemical manufacturing, painting/coating operations, food-processing facility, feed lot, or rendering plant). Moreover, odor impacts are generally an issue of localized concern because it is unusual for odorous emissions from two or more separate projects to combine to result in a cumulative odor impact. No other reasonably foreseeable odor-generating projects have been identified in the project vicinity. For these reasons, the cumulative impact is less than significant. ***No new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation measures would be required for the proposed project.***

Biological Resources

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to biological resources. Refer to the biological resources discussion under Section 7.2.2, Cumulative Impact Analysis, on pages 7-11 and 7-12 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in significant and unavoidable impacts on biological resources as a result of urban development and the loss of wildlife habitat and plant and animal species, including special-status species, even with implementation of mitigation measures. Buildout of the Community Plan would result in the loss of habitat, fragmentation, and decreased connectivity and wildlife movement. Buildout of the Community Plan would contribute to the cumulative loss of wildlife habitat and special-status species associated with the identified potential future projects in the surrounding area, thereby contributing to a cumulatively considerable cumulative impact and resulting in a significant and unavoidable cumulative impact on biological resources.

Project Cumulative Impact Analysis

As discussed under Impact BIO-1, there are several special-status species with the potential to occur on the project site. Construction of the solar trackers, access roads, substation and interconnection facilities, and battery storage area would permanently convert habitat, and could also result in the disruption of breeding behavior, abandonment and failure of nests and burrows, and direct injury or mortality of individuals, thereby resulting in potentially significant impacts. Operation of the proposed project would result in similar impacts. With implementation of project-specific mitigation measures BIO-1a through BIO-1g, as well as measures identified in the HCP, these impacts would be reduced to a less-than-significant level. However, project impacts when combined with other potentially significant impacts to special-status species that would likely result from other cumulative development, could result in significant cumulative impact. Consistent with the conclusions in the Community Plan EIR, the proposed project would contribute to the cumulative impact on special-status species, thereby contributing to a cumulatively considerable cumulative impact and resulting in a significant and unavoidable cumulative impact on biological resources. Therefore, ***with implementation of project-specific mitigation measures, no new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR.***

As discussed under Impact BIO-2, the project site contains a potentially State jurisdictional ephemeral drainage within the southeastern portion of the site. However, the proposed project has been designed to avoid this feature, and would not have a substantial adverse effect on State- or federally protected wetlands. As such, the proposed project, in addition to other cumulative projects, would not contribute to a cumulative impact on wetlands. Therefore, ***no new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation measures would be required.***

As discussed under Impact BIO-3, the area around the junction of I-5 and SR 152 has over the years become an impediment for the north-south movement of wildlife between the San Joaquin Valley and San Luis Reservoir. The past development of the San Luis Reservoir, O'Neill Forebay, the California Aqueduct, Delta-Mendota Canal, Outside Canal, Los Banos Reservoir, the commercial and residential development around Santa Nella, agricultural development east of I-5, and the presence of I-5 and SR 152 themselves have made it increasingly difficult for north-south movement of wildlife in the region. In addition to extensive existing development, the Parkway Project (north of the solar project site) was the only reasonably foreseeable future project identified within 2 miles of the project site. Of the impacts on biological resources associated with current and future developments in the solar project site vicinity, San Joaquin kit fox and Swainson's hawk are the main resources of concern. The movement of tule elk in this region is a secondary concern.

The Parkway Project consists of approximately 518 acres located within the Santa Nella Community Specific Plan on the east side of State Highway 33, between the Delta Mendota Canal and the California Aqueduct. These 518 acres are already zoned for residential development under the Santa Nella Community Specific Plan. The site is one mile north of the solar project site and north of SR-152, which impedes north-south movement of wildlife in the region. Therefore, no additional effects on wildlife movement and foraging ability in the vicinity of the project are anticipated as a result of the proposed project combined with the Parkway Project.

The proposed solar project, which would span an area approximately 3 miles wide, could potentially result in a significant impact on San Joaquin kit fox dispersal through the area. For example, if the site was fenced off such that kit fox could not access the site, this could cause kit foxes to travel

around the solar site, thereby expending more energy and/or placing them closer to I-5 where higher potential for being struck by a vehicle exists. This could also affect kit fox ability to utilize potential den sites within the solar arrays and traverse between denning and hunting areas. In addition, project features and lighting have the potential to disturb wildlife movement through the project area. The overhead transmission lines, such as the gen-tie line, present a collision and electrocution risk for birds such as Swainson's hawk, especially during periods with poor visibility. Further, vegetation maintenance around the solar arrays could result in the disturbance or destruction for badger, burrowing owl, and kit fox burrows, which could lead to burrow abandonment and death of the young and/or adults present within burrows.

Fence design proposed as part of the project would facilitate movement of kit fox and animals of similar size or smaller through the solar arrays and into and out of the solar project site while restricting access into the site by larger animals that may predate upon kit fox, such as coyotes. Recent studies of solar farms within the southern San Joaquin Valley and Carrizo Plain over a 3-year period conducted by Cypher et al. (2021 and 2019) found that San Joaquin kit fox may benefit from the protection from predators that solar farms provide if the farms are designed to facilitate kit fox use (e.g., providing boundary fences that are permeable to kit fox but not coyotes, avoiding the use of rodenticide, managing vegetation among the solar arrays, placing escape dens around fence perimeters).

The project has also been designed to allow for wildlife dispersal through the project area within the existing transmission and gas line utility corridors (wildlife dispersal corridors). The project would include four wildlife dispersal corridors within the project area that would have an approximate average width of 500 feet each. Remote camera data from the nearby Wright Solar development has documented the use of tule elk along wildlife dispersal corridors with similar average width. Therefore, the project would continue to provide opportunities for large animals like tule elk and mountain lions to move through the project site.

In addition, allowing annual grasslands to recolonize the areas under and around the solar arrays, as well as managing vegetation to keep it low, creates conditions that are favored by kit fox. The studies of solar developments also found that den use patterns were similar between kit fox on the solar farm sites and those on the reference sites, indicating that access to den sites may not be affected when an appropriate project design is applied. In addition, the project includes establishment of an off-site mitigation site as a part of the HCP that will support a take permit for the project site for kit fox. The HCP will ensure that the mitigation site will be managed in perpetuity for the benefit of San Joaquin kit fox and Swainson's hawk, as necessary, in accordance with the requirements of the project's incidental take permit application to CDFW. The offsite mitigation site, HCP, and incidental take permit, in combination with the design criteria, conservation strategy, and avoidance and minimization measures prescribed in those documents, along with incorporation of the proposed fencing design discussed in the project description and implementation of project-specific mitigation measures, would reduce the project's contribution to cumulative effects on wildlife movement and foraging habitat in the region, including to the state- and federally listed San Joaquin kit fox and state-listed Swainson's hawk, to a less-than-considerable level. ***With implementation of project-specific mitigation measures, no new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR.***

As discussed under Impact BIO-4, development of the proposed project would be subject to the policies of the General Plan and those outlined in the Regulatory setting which protect biological resources. The proposed project and project-specific mitigation measures would support these identified policies. The proposed project would not conflict with any local policies or ordinances

protecting biological resources. As such, the proposed project, in combination with the identified cumulative projects, would not contribute to a significant cumulative impact. ***No new or substantially more severe significant cumulative impacts would result, beyond those identified in the previous EIR, and no additional mitigation would be required.***

As discussed in Impact BIO-5, no adopted HCP, natural community conservation plan, or other local, regional, or State HCP applies to the solar project site. The establishment and protection of the off-site mitigation site, just south of Los Banos Reservoir, will contribute to protected lands in western Merced County that provide San Joaquin kit fox and Swainson's hawk habitat, including the Agua Fria Conservation Bank, Los Banos Creek Reservoir watershed lands, and the Wright Solar Mitigation Property. Collectively, these protected lands provide a stronghold for the species in the region, allowing them to persist, and contribute to the potential that San Joaquin kit foxes will occasionally move north, across SR 152, retaining necessary genetic connectivity for the species. An HCP for the mitigation site is in development, ensuring that the site will be managed in perpetuity for the benefit of San Joaquin kit fox and other covered species, as necessary, in accordance with requirements of the project's incidental take permit application to CDFW. Therefore, the proposed project would not conflict with an adopted HCP or NCCP. As such, the proposed project, in combination with the identified cumulative projects, would not contribute to a significant cumulative impact. ***No new or substantially more severe significant cumulative impacts would result, beyond those identified in the previous EIR, and no additional mitigation would be required.***

Cultural Resources

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to cultural resources. Refer to the cultural resources discussion under Section 7.2.2, Cumulative Impact Analysis, on page 7-12 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in less than significant cumulative cultural resource impacts with incorporation of standard mitigation measures which provide protocol for when undocumented resources are encountered or discovered during project activities. Therefore, buildout of the Community Plan would not contribute to a cumulatively considerable cultural resources impact.

Project Cumulative Impact Analysis

The geographic scope of potential cumulative effects with respect to cultural resources is usually limited to areas within the physical footprint of a proposed project. With the implementation of the mitigation measures described in Section 3.5, *Cultural Resources*, the project could have a less-than-significant impact on historic resources, archaeological resources, and human remains. Simultaneous construction of other energy-type projects in the project area and other development and infrastructure projects in the vicinity of the project site could potentially result in significant impacts on historic resources, archaeological resources, and human remains, should they be present within the project site or the vicinity of the project site. However, compliance with CEQA requirements for those project, including standard BMPs, along with the mitigation measures identified in the Community Plan EIR and this SEIR, would result in a less-than-significant impact on cultural resources and avoidance of adverse cumulative effects. Therefore, ***with project-specific mitigation, no new or substantially more severe cumulative cultural resources impacts would result beyond those identified in the previous EIR.***

Energy

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to energy, specifically natural gas and electricity. Refer to the electricity and natural gas discussion under Section 7.2.2, Cumulative Impact Analysis, on page 7-19 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in a less than significant cumulative impact on electricity and natural gas, and the Community Plan's contribution would not be cumulatively considerable, as adequate electrical and natural gas facilities are available to provide service to the Community Plan, and PG&E would continue to expand their operations on an as-needed basis to meet new cumulative demand.

Project Cumulative Impact Analysis

Continued growth throughout PG&E's service area, including that from the Parkway project, could contribute to ongoing increases in demand for electricity and natural gas. These anticipated increases would be countered, in part, as state and local requirements related to renewable energy become more stringent and energy efficiency increases. The extent to which cumulative development through 2025, the project's buildout year, could result in the wasteful, inefficient, or unnecessary consumption to energy resources would depend on the specific characteristics of new development, which are not known at this time. As discussed in Section 3.6, *Energy*, SB 100 obligates utilities to supply 100 percent carbon-free electricity by 2045, and SB 1020 requires that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-users by 2045. Similarly, the Pavley standards are expected to increase average fuel economy to roughly 54.5 miles per gallon by 2025, thereby lowering demand for fossil fuels. As detailed in PG&E's 2022 *Integrated Resource Plan*, PG&E is projected to meet its clean energy requirements under SB 100. In 2021, PG&E delivered nearly 48 percent of its electricity from RPS-eligible renewable resources, such as wind, solar, geothermal, biomass and small hydropower. In addition, PG&E's GHG-free energy production, which includes renewable resources, large hydropower, and nuclear energy generation, satisfied 91 percent of PG&E's bundled retail sales in 2021.

The proposed project, as well as three other identified solar projects in Table 5-1, would be used primarily to generate a new source of renewable energy in the form of solar power. The proposed project and three solar projects would ultimately help facilitate the delivery of clean, renewable electricity to existing PG&E customers to meet demand and decrease reliance on non-renewable sources of energy, thereby not resulting in the wasteful or inefficient consumption or energy resources, and furthering state and local renewable energy and energy efficiency goals. Further, other cumulative development would be required to comply with all adopted state and local renewable energy and energy efficiency regulations and plans. Therefore, it is anticipated that future energy users will become more energy efficient and less wasteful over time, and will not create significant cumulative energy impacts. Because a significant cumulative energy impact would not result under cumulative conditions, the project would not contribute to a cumulative impact. Therefore, the cumulative impact would be less than significant. ***No new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation measures would be required for the proposed project.***

Geology, Soils, and Paleontological Resources

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to geology and soils. Refer to the geology and soils discussion under Section 7.2.2, Cumulative Impact Analysis, on pages 7-12 and 7-13 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in a less than significant cumulative impact on geology and soils, and the Community Plan's contribution would not be cumulatively considerable with implementation of recommendations provided in site-specific geotechnical reports and standard engineering practices.

Project Cumulative Impact Analysis

Construction in a seismically active region puts people and structures at risk from a range of earthquake-related effects, such as surface fault rupture, strong ground shaking, and landsliding. However, as discussed in Section 3.7, *Geology, Soils, and Paleontological Resources*, various mechanisms are in place to reduce seismic-related risk, including recommendations from the project-specific geotechnical report which takes into consideration the area's geologic, soil, and seismic conditions. Compliance with CPUC general orders and Merced County building codes would reduce potentially adverse effects associated with strong seismic ground shaking. Project activities would not exceed acceptable risk of upset and therefore would not contribute considerably to the existing cumulative impact related to seismic hazards. Therefore, ***no new or substantially more severe significant cumulative impacts related to seismic hazards would result beyond those identified in the previous EIR and no additional mitigation measures would be required for the proposed project.***

If project construction activities were to result in the damage or loss of paleontological resources, the project could result in a cumulatively significant impact. However, implementation of Community Plan EIR Mitigation Measure 5.3-8 to protect paleontological resources and AMMs/BMPs would reduce this impact. The proposed project's contribution would be less than considerable. Therefore, ***no new or substantially more severe significant cumulative impacts related to paleontological resources would result beyond those identified in the previous EIR and no additional mitigation measures would be required for the proposed project.***

Greenhouse Gas Emissions

Cumulative Impacts Identified in Previous EIR

Climate change is a global problem, and GHG impacts are inherently cumulative. This is because GHGs contribute to the global phenomenon that is climate change, regardless of where they are emitted. Climate change is the result of the individual contributions of countless past, present, and future sources. Therefore, GHG impacts are inherently cumulative, and the analysis provided for the Community Plan EIR (as well as the proposed project) is inclusive of cumulative impacts.

The Community Plan EIR discussed potential impacts on greenhouse gas emissions that could result from buildout of the Community Plan. Refer to the discussion on pages 3-22 to 3-27 of the Community Plan Final EIR, which is incorporated by reference. The Community Plan EIR did not quantify the GHG impact of buildout of the Community Plan, but recognized that the Community Plan would result in emissions of GHG and included mitigation measures that were incorporated into the project in addition to a set of Community Plan policies that reduce GHG emissions.

Project Cumulative Impact Analysis

As discussed under Impact GHG-1, as a solar project, the project would result in a long-term net reduction in GHG emissions. Moreover, as discussed under Impact GHG-2, the project would be consistent with all applicable plans, policies, and regulations adopted for the purpose of reducing GHGs, and the proposed project would help California achieve its GHG reduction goals. Three of the cumulative projects are also solar projects. Therefore, the project would not result in a long-term contribution to cumulative GHG impacts. ***No new or substantially more severe significant cumulative impact related to greenhouse gas emissions would result beyond those identified in the previous EIR and no additional mitigation measures would be required for the proposed project.***

Hazards and Hazardous Materials

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to hazards and hazardous materials. Refer to the hazards and hazardous materials discussion under Section 7.2.2, Cumulative Impact Analysis, on page 7-13 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in less than significant cumulative impacts related to public health and hazards through implementation of standard BMPs and remediation measures. In addition, cumulative impacts related to the development of sensitive land uses in proximity to existing utility lines would be less than significant with preparation of site assessments, risk analyses, and adherence to the California Department of Education criteria for the siting of school facilities. Therefore, cumulative hazards and hazardous materials impacts would be less than significant, and buildout of the Community Plan would not result in a cumulatively considerable contribution.

Project Cumulative Impact Analysis

Hazardous materials associated with construction of the total project are considered low toxicity and would consist of liquid waste, including cleaning fluids, dust palliative, herbicides, and solvents, and some solid hazardous waste, such as welding materials and dried paint. These materials would be transported to the site during construction. Any hazardous materials produced from construction would be collected and transported away from the project site. Because these materials are required for use of construction equipment and vehicles, best management practices would be implemented to reduce exposure to accidental spills involving hazardous materials, as well as compliance with State and federal regulations such as the Hazardous Materials Transportation Uniform Safety Act and Cal/OSHA. Minor spills or drips from the above-mentioned materials would be avoided by thoroughly cleaning up minor spills as soon as they occur. In addition, SWPPP would be required for the project, and would include measures to limit releases of hazardous materials and wastes. While foreseeable projects have the potential to cause similar impacts, it is assumed these future projects would implement similar BMPs. Furthermore, the construction of the all the proposed project component would not overlap with buildout of the Villages at Laguna San Luis Community Plan. Therefore, there would not be construction-related cumulative hazards and hazardous materials impacts. ***No new or substantially more severe significant cumulative construction impact related to hazards and hazardous materials would result beyond those identified in the previous EIR and no additional mitigation measures would be required for the proposed project.***

Operations and maintenance associated with the gen-tie line, PV modules, and inverters would produce no hazardous waste; therefore, none could be spilled or accidentally released. Hazardous materials contained in PV panels are in a solid and nonleachable state and would not be emitted as a result of breakage. The hazardous materials in the battery energy storage system (BESS) would be contained in accordance with specifications that follow applicable federal, state, and local requirements. OSHA requirements call for the inclusion of appropriate ventilation, acid-resistant materials, and spill protection supplies. Battery energy storage units are commonly installed in self-contained storage containers of either a fully self-contained and aggregated into 40-ft storage containers that contain monitoring and control mechanisms, temperature regulators and air conditioning units, and automated fire suppression systems or a BESS system using several approximately four feet wide, three feet long, and seven feet tall containers depending on the battery storage system selected. Because of their distance from the proposed solar project, it would other solar energy projects in the region would not utilize the same containers as the proposed project. Therefore, there would be no cumulative operational hazards and hazardous materials impacts. ***No new or substantially more severe significant cumulative operational impact related to hazards and hazardous materials would result beyond those identified in the previous EIR and no additional mitigation measures would be required for the proposed project.***

Hydrology and Water Quality

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to hydrology and water resources. Refer to the hydrology and water resources discussion under Section 7.2.2, Cumulative Impact Analysis, on pages 7-13 and 7-14 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in less than significant cumulative impacts related to water quality through the preparation and implementation of project-specific Stormwater Pollution Prevention Plans (SWPPP) and BMPs. In addition, cumulative impacts related to stormwater runoff would be less than significant with incorporation of site-specific flood control and drainage concepts and design recommendations to prevent flooding and accommodate increased stormwater flows. Therefore, cumulative hydrology and water resources impacts would be less than significant, and buildout of the Community Plan would not result in a cumulatively considerable contribution.

Project Cumulative Impact Analysis

Hydrologic modeling results indicate that the total project would not significantly increase peak runoff discharges due to impervious area or substantially degrade surface or ground water quality. The project would not substantially alter the existing drainage pattern of the site, and flooding, erosion, and siltation on- or off-site would not be anticipated to occur because of the project. Similarly, the project, in combination with the above-identified cumulative projects, would not result in a cumulative drainage impact, as the cumulative projects do not fall within the same subbasins as the proposed project. The potential to risk release of pollutants due to project inundation is minimal to none due to its geographic location. Chapter 8, Natural Resources, of the November 2012 Background Report prepared for the *2030 Merced County General Plan* notes that portions of the county suffer from groundwater overdraft. The project could use San Luis Water District (SLWD) water or groundwater from the nearby AKT Well for the bulk of water demand, depending on the approvals granted. SLWD water is entirely comprised of surface water sources.

Under the well option, the project would not contribute to groundwater overdraft. Approximately 5 acre-feet (approximately 1,600,000 gallons) would be needed annually, largely to be used for panel washing, irrigation and fireflow, which would account for less than 0.003 percent of the total groundwater inflow, 0.005 percent of the annual average groundwater pumping volume, and 0.019 percent of the annual overdraft. In addition, sufficient water supplies of the region are available to meet the projected water demand of the proposed project during operations in normal, dry, and multiple dry years under either scenario. These results indicate that the project complies with the Basin Plan and GSP. Therefore, there would be no cumulative impact on hydrology and water quality. ***No new or substantially more severe significant cumulative impact related to hydrology and water quality would result beyond those identified in the previous EIR and no additional mitigation measures would be required for the proposed project.***

Land Use and Planning

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to land use. Refer to the land use discussion under Section 7.2.2, Cumulative Impact Analysis, on page 7-14 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in a less than significant cumulative impact on land use conflicts with incorporation of Community Plan Mitigation Measure 5.1-2b, which would require a minimum 100-foot buffer between proposed residential land uses and agricultural areas. In addition, buildout of the Community Plan and potential future projects would be required to demonstrate compliance with the County General Plan goals and policies in order to minimize potential land use conflicts to the greatest extent feasible. Therefore, the Community Plan EIR determined that cumulative land use impacts would be less than significant, and buildout of the Community Plan would not result in a cumulatively considerable contribution.

Project Cumulative Impact Analysis

As identified in Table 5-1 above, one large residential project and three solar projects have been approved and are in the vicinity of the project site. At the time of this SEIR, none of the planned and approved projects have been built. However, should these projects be constructed, they would fundamentally change the rural, low-intensity agricultural character of the area. As discussed in Section 3.11, the project would not physically divide an established community, and is generally consistent with the 2030 Merced County General Plan and the Villages of Laguna San Luis Community Plan, as both documents contain provisions for the siting of renewable energy facilities in the county's agricultural areas. Implementation of mitigation measures AES-1, AES-3, AQ-3, BIO-1a, BIO-1b, BIO-1c, BIO-1d, BIO-1e, BIO-1f, BIO-1g, CUL-1, GEO-1, WQ-1, NOI-1, WF-3a, and WF-3b would ensure consistency with the County's General Plan and Community Plans adopted for the purpose of avoiding or mitigating an environmental effect. The cumulative impact related to land use is related to urbanization in the area as a result of future construction of approved projects. The project would not be urban development, and, following the expiration of the CUP for the project, the site would be returned to its existing state. Therefore, the project would not contribute to a significant cumulative land use impact.

Implementation of project-specific mitigation measures and Community Plan EIR mitigation measures would ensure that no new or substantially more severe significant cumulative impacts related to land use would result beyond those identified in the previous EIR.

Mineral Resources

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated the potential impacts on mineral resources that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.3-7 on pages 5.3-31 and 5.3-32 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that no impacts on mineral resources would result because such resources do not occur in quantities that would be large enough for economical extraction. Because no project impact would occur, no cumulative impact would occur.

Project Cumulative Impact Analysis

In general, a project's potential impacts related to mineral resources are localized, depending on the project site and underlying soils, the level of excavation, cut-and-fill work, and grading, along with other factors, although these localized effects could cumulatively affect the mineral resources available to the region and state as a whole. As discussed in Section 3.12, *Mineral Resources*, updated mapping done by the California Geological Survey indicates some portions of the project site either have little likelihood of containing significant concrete aggregate resources or are likely to contain known or inferred concrete aggregate resources of undetermined mineral resource significance in the form of crushed stone, sand, and gravel (Parrish 2021). Past, present, and reasonably foreseeable projects could contain similar types of mineral resources, and would similarly have localized impacts on mineral resources that could cumulatively affect regional and statewide availability of mineral resources. However, ample mineral resources have been identified in Merced County (Merced County 2012), and therefore, there would be no cumulative impact on mineral resources. The proposed project, in combination with other cumulative development, ***would not result in any new or substantially more severe significant cumulative impacts related to mineral resources beyond those identified in the previous EIR, and no additional mitigation would be required.***

Noise

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to noise. Refer to the noise discussion under Section 7.2.2, Cumulative Impact Analysis, on pages 7-14 and 7-15 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in significant and unavoidable impacts related to the exposure of sensitive receptors to substantial permanent increases in ambient noise levels from cumulative traffic noise, even with implementation of project-specific mitigation such as sound walls and other noise-attenuating features. However, buildout of the Community Plan, in combination with potential future projects, would not result in cumulative noise impacts related to construction noise, and operational stationary- and area-source noise. Nonetheless, buildout of the Community Plan would contribute to the cumulative traffic noise impact associated with the identified potential future projects in the surrounding area, thereby contributing to a cumulatively considerable cumulative impact and resulting in a significant and unavoidable noise impact.

Project Cumulative Impact Analysis

The cumulative geographic context for noise and vibration varies, depending on the source of the noise or vibration. Specifically, the geographic context for cumulative construction noise impacts typically encompasses cumulative projects within 1,000 feet of the project site. Beyond 1,000 feet, the contributions of noise from the construction of other projects would be greatly attenuated through distance and potentially through intervening structures. The cumulative context for stationary-source noise impacts, such as noise effects from BESS or other mechanical equipment, as well as vibration effects from construction activities is generally smaller than this distance. Regarding vibration, peak (PPV) vibration levels typically do not combine to elevate the overall peak vibration level unless multiple pieces of vibration-intensive equipment are located very close to one another. Cumulative impacts related to vehicular traffic noise are based on the overall forecast average daily traffic along roadway segments near the project site, which includes traffic increases from all growth in the project area, as predicted in the traffic model, noting that the project would result in very low volumes of operational traffic. The cumulative projects near the project site are described in Table 5-1 of this chapter.

Regarding construction noise, construction noise is a localized impact that reduces as distance from the noise source increases. The cumulative setting for construction noise impacts is considered to be approximately 1,000 feet from the project site, since projects located within this distance could expose receptors between the two projects to noise, depending on the intervening distances. Most cumulative projects are located approximately 1 mile, or more, from the project site. The exact construction schedules for other projects located at further distances from the project site are not known at this time. However, because there are no currently proposed or approved projects located in close proximity to the project site, it is unlikely that construction for cumulative projects would occur concurrently with Project construction activities and in very close proximity to the project site. For the projects located further from the project site, construction noise would not be expected to combine to expose the same receptors to even greater noise levels than would be experienced by construction of the proposed project.

As described under Impact NOI-1, most Project construction would take place during daytime hours, as defined in the Merced County Code (i.e., 7:00 a.m. to 6:00 p.m.). However, some limited work may take place between 6:00 p.m. and 8:00 p.m. As shown in Table 3.13-10 of this SEIR, estimated worst-case noise levels at nearby receptors due to construction at the solar project site during daytime hours could range from 23 to 70 dBA L_{eq} and exceed existing average daytime noise levels by 0 to 16 dBA. These estimated worst-case noise levels would occur for only a relatively short period (i.e., when a given activity takes place in the areas nearest the affected receptor). For a large portion of the 14-month project construction schedule, construction activities would occur much farther from the residences, and noise levels from construction would be lower. However, construction noise during weekday daytime hours is exempt from the quantitative noise limits of the MCC. Therefore, although temporary construction noise increases would occur during daytime hours, construction noise would still comply with the MCC as a result of the daytime construction noise exemption. Daytime construction noise impacts would therefore be less than significant. In addition, noise levels from evening construction activities would not exceed the 75 dBA L_{max} threshold at nearby residential properties (refer to SEIR Table 3.13-11) and would not exceed existing average evening noise levels by 10 dBA or more. Therefore, noise impacts from solar project construction activities occurring during evening hours were determined to be less than significant. For these reasons, and especially because no cumulative projects in close vicinity to the proposed project are expected to

undergo construction at the same time, cumulative construction noise impacts would be less than significant. ***No new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation measures would be required.***

Regarding operational traffic noise, because no cumulative projects are located in close proximity to the proposed project, and because traffic volumes associated with the proposed project would be very low after completion of project construction, operational traffic noise from the project would not be expected to combine with traffic noise from cumulative projects to result in a cumulative traffic noise impact. Cumulative operational traffic noise impacts would be less than significant. ***No new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation measures would be required.***

Operational equipment noise, or stationary sources of noise during project operations, from the solar project site and PG&E substation site under both the AC and the DC options were determined to result in less than significant noise impacts because operational noise would comply with all three applicable criteria in Merced County, with the exception of the potential emergency generator during testing (which would be less than significant with mitigation). Because there are no currently proposed or approved projects in close proximity to the project site, operational equipment noise from the project would not be expected to combine with equipment noise from cumulative projects to expose the same receptors to increased noise levels during project operations. Cumulative impacts related to operational equipment noise would also be less than significant. Therefore, ***no new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation measures would be required.***

Regarding the potential for cumulative construction-related vibration impacts, vibration impacts are based on instantaneous PPV levels. Therefore, because PPV is a measure of the peak instantaneous vibration level, rather than an average, other sources of vibration operating simultaneously (e.g., for other project sites, or even on the same project site) would not be expected to combine to raise the overall peak vibration level experienced at a nearby sensitive use. In addition, because there are currently no proposed or approved projects within 1 mile of the project site, and because PPV vibration levels would not be expected to combine to raise the overall PPV vibration level even if construction activities would occur very close to one another, cumulative ground-borne vibration levels from project construction would not combine with vibration from the construction of other cumulative projects to result in greater overall vibration levels near the project site. Therefore, cumulative vibration impacts related to both potential damage and annoyance would be less than significant. ***No new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Population and Housing

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to population and housing. Refer to the population and housing discussion under Section 7.2.2, Cumulative Impact Analysis, on page 7-15 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in less than significant cumulative population and housing impacts,

as no new facilities or uses resulting in additional growth would be constructed beyond what is already planned for, and that would be provided, as part of buildout of the Community Plan. In addition, buildout of the Community Plan and potential future projects would not displace substantial numbers of existing housing or people. Therefore, cumulative population and housing impacts would be less than significant, and buildout of the Community Plan would not result in a cumulatively considerable contribution.

Project Cumulative Impact Analysis

As described in Section 3.14, Population and Housing, the population of Merced County has increased by approximately 12 percent in the last decade. The project would not construct any housing units, would not displace any existing housing, and would not change the number of housing units contemplated by the County General Plan. As described in the section, the project would not directly or indirectly induce population growth in the region. The combined population impacts of the entire proposed project, including its off-site residential redesignation, the solar project, the PG&E substation improvements, and the off-site mitigation site would not result in any new or substantially more severe impacts beyond those identified in the previous EIR. Therefore, the project, when combined with reasonably foreseeable projects, would not contribute to a cumulatively significant impact regarding population and housing. ***No new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Public Services

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to public services. Refer to the public services discussion under Section 7.2.2, Cumulative Impact Analysis, on page 7-15 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in less than significant cumulative public resources impacts, as no new public service provider facilities would be required beyond what is already planned for, and schools that would be provided as part of buildout of the Community Plan would have sufficient long-term capacity to serve Community Plan growth demand. In addition, project proponents for both the Community Plan and potential future projects would be required to pay development impact fees, which is deemed sufficient to mitigate school impacts. Therefore, cumulative public services impacts would be less than significant, and buildout of the Community Plan would not result in a cumulatively considerable contribution.

Project Cumulative Impact Analysis

As described in Section 3.15, Public Services, the construction, operation, and decommissioning of the solar project, PG&E substation improvements, and off-site mitigation site would not result in the need for new or physically altered public services facilities. Therefore, the project, when combined with reasonably foreseeable projects, would not contribute to a cumulatively significant impact with regard to public services. ***No new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Recreation

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to recreation. Refer to the public services discussion under Section 7.2.2, Cumulative Impact Analysis, on page 7-15 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in less than significant cumulative impacts on recreational facilities, as no new recreational facilities or uses resulting in additional growth would be constructed beyond what is already planned for, and that would be provided, as part of buildout of the Community Plan. Therefore, cumulative recreation impacts would be less than significant, and buildout of the Community Plan would not result in a cumulatively considerable contribution.

Project Cumulative Impact Analysis

As described in Section 3.16, Recreation, the construction, operation, and decommissioning of the solar project, PG&E substation improvements, and off-site mitigation site would result in no new or substantially more severe impacts beyond those identified in the previous EIR. The combined project, along with reasonably foreseeable future projects, would not increase population such as to increase the use of existing parks and recreational facilities or require the construction of new facilities. Therefore, there would be no considerable contribution to a cumulatively significant impact with regards to recreational resources. ***No new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Transportation

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to transportation. Refer to the transportation discussion under Section 7.2.2, Cumulative Impact Analysis, on pages 7-126 and 7-17 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in less than significant cumulative transportation impacts with construction of transportation and circulation improvements (e.g., traffic signals, new roadways, roadway widening, and public transit) that would be identified in project-specific mitigation measures and fair share contributions towards the County's finance plan. Therefore, buildout of the Community Plan would not contribute to a cumulatively considerable transportation impact.

Project Cumulative Impact Analysis

Cumulative increases in VMT as a result of construction of past, present, and reasonably foreseeable future actions making up the cumulative scenario would not be permanent and would not result in a cumulative traffic impact. Based on technical guidance from the Governor's Office of Planning and Research, if a project has a less than significant impact on VMT using the screening criteria, project operation would not contribute to a cumulative VMT impact. As discussed in Impact TRA-2, the total project's operational VMT impact would be less than significant based on the OPR guidelines screening criteria for a small project and the total project's contribution to cumulative VMT impacts

would be less than significant. Therefore, the total project would not contribute to a cumulative impact related to transportation or traffic. The cumulative impact would be less than significant. ***No new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Potential impacts associated with conflicts with a program, plan, ordinance or policy addressing the circulation system, transportation safety hazards, and emergency access would be site-specific and do not result in an existing cumulative impact in the cumulative geographic study area. Because there is no existing cumulative impact, the total project would not contribute to a cumulative impact related to conflicts with a program, plan, ordinance or policy addressing the circulation system, transportation safety hazards, and emergency access. The cumulative impact would be less than significant. ***No new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

Tribal Cultural Resources

Cumulative Impacts Identified in Previous EIR

Assembly Bill 52 took effect in 2015, after the certification of the Community Plan in 2008. Therefore, the Community Plan EIR did not provide a standalone analysis of potential impacts on tribal cultural resources. However, the Community Plan EIR did analyze cumulative impacts to archaeological resources, which can also be determined to be tribal cultural resources, and in general the issue of impacts to tribal cultural resources was known at the time of the Community Plan EIR. Refer to the cultural resources discussion under Section 7.2.2, Cumulative Impact Analysis, on page 7-12 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in less than significant cumulative cultural resource impacts, including archaeological resources, with incorporation of standard BMPs which provide protocol for when undocumented resources are encountered or discovered during project activities. Therefore, buildout of the Community Plan would not contribute to a cumulatively considerable cultural resources impact.

Project Cumulative Impact Analysis

The geographic scope of potential cumulative effects with respect to tribal cultural resources is usually limited to areas within the physical footprint of a proposed project, given the inherently localized nature of impacts to these resources. With the implementation of the mitigation measures described in Section 3.18, *Tribal Cultural Resources*, the project could have a less-than-significant impact on tribal cultural resources. Simultaneous construction of other energy-type projects in the project area and other development and infrastructure projects in the vicinity of the project site could potentially result in significant impacts on tribal cultural resources, should they be present within the project site or the vicinity of the project site. However, compliance with CEQA, including standard BMPs, along with those measures identified in the Community Plan EIR and this SEIR, would result in a less- than-significant cumulative impact on tribal cultural resources and avoidance of adverse cumulative effects. Therefore, ***with project-specific mitigation, no new or substantially more severe cumulative impacts would result beyond those identified in the previous EIR.***

Utilities and Service Systems

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated cumulative impacts related to utilities and service systems. Refer to the utilities and service systems discussion under Section 7.2.2, Cumulative Impact Analysis, on pages 7-18 to 7-20 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that buildout of the Community Plan, in combination with potential future projects in the surrounding area, would result in significant and unavoidable impacts related to water treatment, wastewater treatment, and solid waste, as the existing utility facilities and infrastructure would not have capacity to serve buildout of the Community Plan, in addition to other potential future projects necessitating the need to construct new facilities or expand existing facilities. However, buildout of the Community Plan, in combination with potential future projects would not result in cumulative impacts related to water supply and electricity and natural gas. Nonetheless, buildout of the Community Plan would contribute to the cumulative water treatment, wastewater treatment, and solid waste impacts associated with the identified potential future projects in the surrounding area, thereby contributing to a cumulatively considerable cumulative impact and resulting in a significant and unavoidable utilities and service systems impact.

Project Cumulative Impact Analysis

As discussed under Impact UT-1, no new or expanded wastewater treatment, storm water drainage, natural gas, or telecommunications facilities would be needed for the proposed project. The proposed project would not require modifications or connections to wastewater treatment, storm drainage, natural gas, or telecommunication facilities. As such, the proposed project, in addition to other cumulative projects, would not contribute to a cumulative impact on wastewater treatment, storm water drainage, natural gas, or telecommunication facilities. Therefore, ***no new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation measures would be required.***

As discussed under Impact UT-2, water supply would be met either by the SLWD through existing connections to the solar project site, or via an existing off-site private irrigation well on AKT's Mid-Cal property. The method that is ultimately implemented will depend on which approvals are granted. Water would be stored on the project site in a permanently installed 5,000-gallon water tank. Water necessary for construction would be used primarily for dust control. During operations, water would be used for panel washing and irrigation. Approximately 5 acre-feet (approximately 1,600,000 gallons) would be needed annually, largely to be used for panel washing. Under the SLWD option, the SLWD would be required to issue a Construction Water Agreement and Solar Water Management Agreement pursuant to its Rules and Regulations, ensuring that sufficient supplies are available to serve the project. Under the well option, the project's water use would account for less than 0.003 percent of the total groundwater inflow, 0.005 percent of the annual average groundwater pumping volume, and 0.019 percent of the annual overdraft. Therefore, sufficient water supplies of the region are available to meet the projected water demand of the proposed project during operations in normal, dry, and multiple dry years. As such, the proposed project would not contribute to a cumulative water supply impact. Therefore, ***no new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation measures would be required.***

As discussed under Impact UT-3, construction and operation of the proposed project would not require connections to a municipal wastewater treatment system, and no wastewater treatment or conveyance would be necessary, as no permanent or temporary toilets would be installed. As such, the proposed project would not contribute to the significant cumulative wastewater impact. Therefore, ***no new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR and no additional mitigation measures would be required.***

As discussed under Impacts UT-4 and UT-5, operation of the solar 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. Project operation would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. However, both landfills are expected to close prior to the project's decommissioning date in 2060. No other landfills with disposal capacity beyond 2054 have been identified in Merced County. Because landfill capacity in the County has not been identified beyond 2054, and the project would operate until 2060, it is conservatively concluded that, as disclosed in the Community Plan EIR, operational impacts would be significant and unavoidable, and the proposed project would contribute to a significant cumulative impact. The significant cumulative impact associated with the solar project is a result of the additional operational waste generated by the solar project between 2054-2060, which would require even more landfill capacity in addition to existing and proposed development, since the Billy Wright Landfill is expected to reach full capacity by 2054. The construction of additional or further expansion of existing landfill facilities could result in significant and unavoidable impacts on the environment (e.g., impacts related to air quality and possibly impacts on other resources depending on the option chosen). Because specific projects have not yet been identified and studied, it is not possible to identify feasible mitigation. Therefore, ***a new significant cumulative impact would result beyond those identified in the previous EIR, and feasible mitigation is not available.***

Wildfire

Cumulative Impacts Identified in Previous EIR

The Community Plan EIR evaluated the potential impacts related to the exposure of people or structures to wildfires that could result from buildout of the Community Plan. Refer to the discussion under Impact 5.4-5 on pages 5.4.19 and 5.4.20 of the Community Plan EIR, which is incorporated by reference. The Community Plan EIR found that the development under the Community Plan could introduce people or structures to risk of loss or injury from wildfire due to the site's Moderate FHSZ designation. However, with compliance with state regulatory requirements, California's Building and Fire Code, and policies of the community plan (e.g., Land Use Concept Policy 4.B.1 and Community Design Concept Goal 3.0), impacts related to the exposure to wildfire would be minimized, and the Community Plan EIR concluded that this impact would be less than significant. The Community Plan EIR did not explicitly address cumulative impacts on wildfire. However, cumulative projects would also be required to comply with applicable regulatory requirements and policies.

Project Cumulative Impact Analysis

The geographic scope of the cumulative impacts on wildfire is the areas surrounding the project site. Typically, when structures or people are added to an area, the risk of wildfire increases. As evident in the past couple of years, wildfires throughout the greater Merced County, as well as the state of California, can be far reaching and amount to widespread damage. The severity and damage done by

a wildfire is dependent on the amount of rain the area has received at that point in time, fuel availability, and whether certain fire management techniques have been implemented, among many other factors. Development of other future projects in areas surrounding the project site would be required to adhere to any state and federal environmental regulations, including those related to wildfire risk, associated with construction, demolition, and/or remediation, consequently improving overall environmental quality and reducing cumulative wildfire impacts.

As described in Section 3.20, *Wildfire*, the project area is within moderate to high fire hazard severity zones. Construction, operation, and decommissioning activities associated with the proposed solar facility are anticipated to have minimal potential to affect wildfire risks; however, construction of the solar project would temporarily increase the wildfire risk in the project vicinity by introducing construction equipment and personnel along existing rights-of-way and private roadways. The introduction of construction personnel and equipment in shoulder areas along public and private roadways would increase the potential for unintentional ignition of roadside vegetation. However, current activities undertaken by State and local agencies, such as prescribed burning and construction, are expected to follow fire management goals and policies set forth by the County General Plan, requirements of the California Building Standards Code, and all other applicable fire and safety policies or regulations set forth in the regulatory setting of the wildfire section, above, to minimize risk of wildfire. Compliance with these established goals, policies, and requirements would reduce potential impacts related to wildfire risks and the pollutants associated with wildfire. In addition, all perimeter roads and evenly distributed interior access roads within the solar project site would conform to County and California Fire Code standards, and the solar project would meet the minimum standards set forth by Public Resources Code Section 4290, Title 14, for fire protection and emergency water standards.

During operation of the project, lithium-ion (Li-ion) batteries would be used. Li-ion batteries have flammable properties, and therefore, can pose a fire risk. Although adherence to OSHA and National Fire Protection Association safety standards and implementation of an emergency action plan would reduce impacts related to project infrastructure that may exacerbate fire risks, it would not eliminate. Implementation of mitigation measures WF-3a and WF-3b would reduce impacts associated with construction and operation of the proposed solar facility, specifically those related to the Li-ion battery, to less than significant levels. Similar practices can be assumed for foreseeable solar projects in the area. Consequently, wildfire impacts as a result of project construction and operation, in combination with other reasonably foreseeable future projects, would not be cumulatively considerable. Therefore, ***with implementation of project-specific mitigation, no new or substantially more severe significant cumulative impacts would result beyond those identified in the previous EIR.***

5.3 Growth-Inducing Impacts

State CEQA Guidelines Section 15126.2 (b) requires an EIR to examine whether a proposed project may have a growth inducing impact. This includes the ways in which the proposed project could foster economic or population growth, the construction of additional housing or removal of obstacles to population growth. The analysis should also discuss whether the proposed project's characteristics may encourage and facilitate other activities that could significantly affect the environment. This section notes that "it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significant to the environment."

5.3.1 Growth Inducing Impacts Identified in Previous EIR

The Community Plan EIR Section 7.1.2 provided a detailed description of the potential growth-inducing impacts associated with buildout of the Community Plan and is incorporated by reference herein. Buildout of the Community Plan would provide new access throughout an undeveloped area, and would require new on-site, and surrounding, transportation and circulation improvements which would remove obstacles to growth. However, no roadways proposed as part of the Community Plan would extend outside the community plan area, and therefore the Community Plan roadway network would not be considered growth inducing. Nonetheless, due to the amount of development, specifically residential uses, proposed as part of the Community Plan, buildout of the Community Plan would be growth inducing because “the increased population associated with developing the project area would increase demand for goods and services, thereby fostering population and economic growth in the western portion of the County.” With this growth, the Community Plan EIR determined, while speculative, that it could be expected that development of the Community Plan would place pressure on adjacent surrounding areas comprised of agricultural land to be developed.

5.3.2 Project Growth Inducing Impacts

The project consists of the proposed Las Camas solar facility, located on 1,741 acres of undeveloped, privately owned land, and improvements to PG&E’s Los Banos substation, located approximately 0.2 mile west of the solar project site. The project would also include construction of a 230-kV transmission line to connect the solar project to the PG&E substation. Once in operation, the project would require minimal services, would employ fewer than eight onsite employees, and would generate minimal traffic. Because it would not involve any extension of services beyond those necessary to serve the project and would have a small number of employees, the project would not foster growth or housing demand in the area. In addition, although the project would provide a new source of energy, which could support growth, the development of the solar facility itself would be in response to increased energy demand from existing consumers, and to reduce reliance on other forms of non-renewable energy. In addition, the key obstacles to population growth in this area are limited water supply, limited access, lack of sewer service, and Merced County land use policies that are protective of agricultural land. The project would not increase the water supply available to other properties in the vicinity or provide sewer service, nor would it result in improved access. Therefore, it would not remove key obstacles to population growth in the area, and would not result in additional growth inducing impacts.

The solar project would also require an off-site amendment to the General Plan and community plan to redesignate roughly 202.8 acres south of the solar project site from single-family residential use to high-density/medium-density residential use. As evaluated in Section 3.14, *Population and Housing*, the proposed off-site residential redesignation would not result in the direct construction of housing, nor would it generate new population growth. It would allow the County to maintain affordable (i.e., medium-density/high-density) housing development capacity and meet its RHNA allocation in accordance with the County Housing Element and State law (as described above under *Housing Element Law*). Although the proposed off-site residential redesignation would increase planned density within the residential redesignation area, it would not change the overall medium-density/high-density residential capacity of the approved community plan. Instead, it would redistribute already-approved medium-density/high-density residential capacity to a different area within the community plan area. Future development within the off-site residential redesignation

area would be subject to the policies in the community plan. The off-site residential redesignation area and the larger Community Plan area are still available for residential development as planned under the Community Plan. Therefore, ***no new or substantially more severe growth-inducing impacts would result beyond those identified in the previous EIR and no additional mitigation would be required.***

5.4 Significant Irreversible Environmental Changes

CEQA Guidelines Section 15126.2(c) requires that an EIR discuss any environmental changes that would be irreversible if a project were implemented. CEQA defines irreversible environmental changes as the irretrievable commitment of resources and/or irreversible damage resulting from environmental accidents. Irreversible changes may include current or future uses of non-renewable resources, and secondary or growth inducing impacts that commit future generations to similar uses. The CEQA Guidelines describe three distinct categories of significant irreversible changes, including changes in land use that would commit future generations to specific uses; irreversible changes from environmental actions; and consumption of nonrenewable resources.

5.4.1 Significant Irreversible Environmental Changes Identified in Previous EIR

The Community Plan EIR Section 7.3 provided a detailed description of the potential significant irreversible environmental changes that would be caused with buildout of the Community Plan and is incorporated by reference herein. The Community Plan EIR determined that construction of the Community Plan would require both renewable and nonrenewable resources. However, construction activities associated with buildout of the Community Plan would only account for a small percentage of resources available and would not result in the substantial depletion of such resources. In addition, construction activities associated with buildout of the Community Plan would likely involve the use varying type of hazardous materials. However, construction activities would be required to adhere to State and federal regulations regarding hazardous materials, ensuring that buildout of the Community Plan would not result in impacts related to environmental accidents. As stated previously, buildout of the Community Plan would include the construction of new roadways which would extend access and remove accessibility restraints to the Community Plan area. By providing increased access, buildout of the Community Plan would “commit future generations to the significant irreversible change of converting the project area from agricultural and open space lands... to urbanized land uses.”

5.4.2 Project Significant Irreversible Environmental Changes

Construction and operation activities, specifically ongoing maintenance, of the proposed project would involve the consumption of nonrenewable resources until the project would be decommissioned, which would occur after 35 years. Both project construction and operation would consume gasoline and diesel. However, the consumption of these nonrenewable resources during project operation would be minimal and limited to vehicles traveling to and from the solar facility for operations and maintenance. In addition, once operational, the proposed project would provide an efficient and renewable source of energy in the form of solar power that would offset its operational energy use and consumption of nonrenewable resources. Therefore, the proposed

project would not commit resources irreversibly. Therefore, ***no new or substantially more severe significant irreversible environmental changes would result beyond those identified in the previous EIR.***

5.5 Significant and Unavoidable Impacts

State CEQA Guidelines Section 15126.2 (c) requires an EIR to describe any significant environmental effects which cannot be avoided as a result of a project. A significant and unavoidable impact is one that would cause a substantial adverse effect on the environment and for which mitigation is not available to reduce the impact to a less-than-significant level. This includes any significant impacts, including those which can be mitigated but not reduced to a level of insignificance.

5.5.1 Significant and Unavoidable Impacts Identified in Previous EIR

As discussed in Chapter 3, *Impact Analysis*, of this SEIR, the proposed project would result in the following significant and unavoidable impacts, all of which were identified as significant and unavoidable impacts in the Community Plan EIR and included in the Statement of Overriding Considerations (SOC) adopted by the County on September 2, 2008

- **Impact AES-1:** Potential to substantially degrade the existing visual character or quality of public views of the site and its surroundings (in nonurbanized areas), including scenic vistas. The solar project would introduce solar facilities within scenic vistas.
- **Impact AES-2:** Potential to substantially damage scenic resources (including trees, rock outcroppings, and historic buildings) within a state scenic highway. The solar project would introduce solar facilities within viewsheds from State Route (SR), a scenic highway.
- **Impact AES-3:** Introduction of a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area. The solar project would introduce nighttime construction lighting near adjacent residential uses.
- **Impact AQ-3:** Expose sensitive receptors to substantial pollutant concentrations. Grading for the solar project could release spores of the *Coccidioides immitis* fungus, including additional grading outside the Community Plan area.
- **Impact BIO-1:** Potential to adversely effect, either directly or through habitat modifications, on any special-status species. Construction and operation of the solar project could adversely affect golden eagle, Swainson's hawk, western burrowing owl, loggerhead shrike, American badger, and San Joaquin kit fox, including within potential habitat areas outside the Community Plan area.
- **Impact BIO-3:** Potential disruption of wildlife movement corridor. Solar project features and lighting could disturb wildlife movement through the project area, including areas outside the Community Plan area.
- **Impact CUL-1:** Potential to cause a substantial adverse change in the significance of a historical resource. Construction activities for the solar project could encounter unknown historical resources, including within areas outside the Community Plan area.

- **Impact CUL-2:** Potential to cause a substantial adverse change in the significance of an archaeological resource. Construction activities for the solar project could encounter unknown archaeological resources, including within areas outside the Community Plan area.
- **Impact CUL-3:** Disturbance of any human remains, including those interred outside of formal cemeteries. Construction activities for the solar project could encounter unknown human remains, including within areas outside the Community Plan area.
- **Impact GEO-1:** Direct or indirect exposure of people or structures to potential substantial adverse effects involving strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides. The solar project would introduce structures that are susceptible to strong seismic ground shaking and damage, including structures within areas outside the Community Plan area.
- **Impact GEO-2:** Potential to result in substantial soil erosion or the loss of topsoil. Grading for the solar project could cause erosion, including additional grading outside the Community Plan area.
- **Impact GEO-3:** Placement of project-related facilities on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse. The solar project would introduce structures that are susceptible to seismic hazards and damage, including structures within areas outside the Community Plan area.
- **Impact GEO-4:** Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property. The solar project would introduce structures that are susceptible to damage from expansive soils, including structures within areas outside the Community Plan area.
- **Impact GEO-5:** Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Construction activities for the solar project could encounter unknown paleontological resources, including within areas outside the Community Plan area.
- **Impact HAZ-3:** Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. If future schools within the Community Plan area are constructed near the solar project, the schools could be exposed to health and safety impacts from solar project pipelines and electrical transmission lines.
- **Impact WQ-1:** Violation of any water quality standard or WDR. Construction activities for the solar project could impair surface and groundwater quality, including within areas outside the Community Plan area.
- **Impact WQ-5:** Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Construction activities for the solar project could impair surface and groundwater quality, including within areas outside the Community Plan area.
- **Impact LU-2:** Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. Because of the project-specific significant impacts included in this list, the project could conflict with County General Plan and Community Plan policies adopted for the purpose of avoiding or mitigating an environmental effect.

- **Impact NOI-1:** Generation of a substantial temporary or permanent increase in existing ambient noise levels in the project vicinity. The solar project could require emergency generator testing, which could result in noise levels that exceed the County's allowable noise levels.
- **Impact TCR-1:** Impact a tribal cultural resource, defined in Public Resources Code section 21074, resources listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1. Construction activities for the solar project could encounter unknown tribal cultural resources, including within areas outside the Community Plan area.
- **Impact UT-4:** Project-related exceedance of the relevant landfill's permitted capacity. Landfill capacity in the County has not been identified beyond 2054. It is unknown whether sufficient landfill capacity will exist to serve project operation and decommissioning between 2054 and 2060.
- **Impact WF-3:** Require the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. Construction and operation of the solar project would introduce equipment, including Li-ion batteries, that could exacerbate the risk of wildfire, including in areas outside the Community Plan.

5.5.2 Project Significant and Unavoidable Impacts

The SEIR analysis determined that with implementation of applicable Community Plan mitigation measures and new project-specific mitigation measures, one new significant impact or substantially more severe significant impacts would occur compared to the significant impacts identified in the previous EIR: Impact UT-4 (project-related exceedance of the relevant landfill's permitted capacity). Under the proposed project, this impact would remain significant and unavoidable and would be more severe than the significant and unavoidable impact identified in the previous EIR due to the additional solid waste that would be generated during solar project decommissioning (and to a lesser extent, operation between 2054 and 2060). For the same reasons, cumulative impacts on solid waste would remain significant and unavoidable and would be more severe than the significant and unavoidable impact identified in the previous EIR.

5.6 References Cited

5.6.1 Printed References

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6.1 Lead Agency

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