Initial Study/Mitigated Negative Declaration for the Dos Palos Clean Power Project, Merced County, California

MARCH 2023

PREPARED FOR

Merced County
Community and Economic Development Department

PREPARED BY

SWCA Environmental Consultants

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION FOR THE DOS PALOS CLEAN POWER PROJECT, MERCED COUNTY, CALIFORNIA

Prepared for

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SWCA Project No. 76431

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Acronyms and Abbreviations

A-1	General Agricultural Zone
AB	Assembly Bill
AC	alternating current
ACM	asbestos-containing material
ADL	aerially deposited lead
AMBIENT	AMBIENT Air Quality & Noise Consulting
APN	Assessor's Parcel Number
Applicant	Renewable America LLC
BMP	best management practice
BPS	Best Performance Standard
BWL	Billy Wright Landfill
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCIC	Central California Information Center
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDOC	California Department of Conservation
CDOF	California Department of Finance
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFC	California Fire Code
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	Merced County

CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CRSR	Cultural Resources Survey Report
CUP	Conditional Use Permit
dB	decibels
DC	direct current
DPM	diesel particulate matter
DTSC	California Department of Toxics Substances Control
ECP	Erosion Control Plan
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration
GHG	greenhouse gas
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
H_2S	hydrogen sulfide
hp	horsepower
I-	Interstate
in/sec	inches per second
IPaC	Information Planning and Consultation
ITP	Incidental Take Permit
L_{50}	median noise level
L_{eq}	average noise level
LOS	Level of Service
LRA	Local Responsibility Area
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
MCAG	Merced County Association of Governments
MCFD	Merced County Fire Department
MCRWMA	Merced County Regional Waste Management Authority
MIUGSA	Merced Irrigation-Urban Groundwater Sustainability Agency
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
mpg	miles per gallon
MPO	metropolitan planning organization
MRZ	Mineral Resource Zone
MSGSA	Merced Subbasin Groundwater Sustainability Agency
MW	megawatt

MWac	megawatt alternating current
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	California Native American Heritage Commission
NHD	National Hydrography Dataset
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NO_3	nitrates
NOA	naturally occurring asbestos
NO_X	nitrogen oxides
NRCS	U.S. Department of Agriculture Natural Resources Conservation Service
NWI	National Wetlands Inventory
O_3	ozone
OPR	California Governor's Office of Planning and Research
Pb	lead
PG&E	Pacific Gas and Electric Company
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
PM_{10}	particulate matter 10 microns or less in diameter
PPV	peak particle velocity
PRC	California Public Resources Code
project	Dos Palos Clean Power Project
PV	photovoltaic
RNA	Renewable America LLC (Applicant)
ROG	reactive organic gases
RTP	Regional Transportation Plans
RWQCB	Central Valley Regional Water Quality Control Board
SB	Senate Bill
SCS	Sustainable Communities Strategy
SHTAC	Swainson's Hawk Technical Advisory Committee
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMARA	California Surface Mining and Reclamation Act
SO	sulfur monoxide
SO_2	sulfur dioxides
SO_3, SO_4, SO_4^{-2}	sulfates
SO_X	sulfur oxides
SR-	State Route
SSC	California Species of Special Concern
SWCA	SWCA Environmental Consultants
SWRCB	State Water Resources Control Board
TIWD GSA-1	Turner Island Water District Groundwater Sustainability Agency #1
TPY	tons per year

USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VDE	visible dust emissions
VMT	vehicle miles traveled

1 INTRODUCTION

Project Title:	Dos Palos Clean Power Project Initial Study/Mitigated Negative Declaration
Lead Agency:	Merced County Community and Economic Development Department 2222 M Street, 2nd Floor, Merced, CA 95340
Lead Agency Staff Contact:	Cameron Christie, Planner I (209) 385-7654 x4587
Project Applicant:	Renewable America LLC

1.1 CEQA Statute and Guidelines

According to California Environmental Quality Act (CEQA) Statute Section 21064.5:

> MITIGATED NEGATIVE DECLARATION
>
> "Mitigated negative declaration" means a negative declaration prepared for a project when the initial study has identified potentially significant effects on the environment, but (1) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur, and (2) there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment.

According to State CEQA Guidelines Article 6. Negative Declaration Process:

> 15070. DECISION TO PREPARE A NEGATIVE OR MITIGATED NEGATIVE DECLARATION
>
> A public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a project subject to CEQA when:
>
> (a) The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the project may have a significant effect on the environment, or
>
> (b) The initial study identifies potentially significant effects, but:
>
> (1) Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and

(2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

15071. CONTENTS

A Negative Declaration circulated for public review shall include:

(a) A brief description of the project, including a commonly used name for the project, if any;

(b) The location of the project, preferably shown on a map, and the name of the project proponent;

(c) A proposed finding that the project will not have a significant effect on the environment;

(d) An attached copy of the Initial Study documenting reasons to support the finding; and

(e) Mitigation measures, if any, included in the project to avoid potentially significant effects.

1.2 Project Location

The Dos Palos Clean Power Project (project) would be constructed, operated, and decommissioned within an 11.3-acre portion of a 39-acre parcel (Assessor's Parcel Number [APN] 089-020-049-000) located approximately 0.5 mile north of the city of Dos Palos in unincorporated Merced County, California (herein referred to as the project site) (Figure 1). The project site is situated on the west side of Elgin Avenue/State Route (SR-) 33 at 19553 Elgin Avenue and is accessed from two unpaved driveways off of Elgin Avenue located on the east side of the property.

1.3 Environmental Setting

The project site is located on land designated Agricultural in the *2030 Merced County General Plan* and is zoned A-1 (General Agricultural). The site supports an existing vacant residential structure, a domestic water well, a septic system, and several clusters of trees and vegetation on the east side of the property, with the remaining majority of the property being currently used for agricultural row crop cultivation. The approximately 39-acre property has relatively flat topography and supports an existing approximately 15-foot-wide, 84-foot-long unpaved access road that connects to Elgin Avenue at the northeast corner of the property and traverses along the entire northern boundary of the parcel, bisects the center of the property, and traverses the majority of the southern boundary of the parcel. In addition, two irrigation ditches with well-defined banks are located on-site to the north and west of the proposed development area.

The project site is generally surrounded by agricultural cultivation and livestock uses and scattered rural residences to the north, Elgin Avenue and agricultural cultivation uses to the east, agricultural cultivation and rural residential uses to the south, and agricultural cultivation and livestock uses and scattered rural residences to the west.

1.4 Project Description

The project includes a request by Renewable America LLC (RNA; Applicant) for a Conditional Use Permit (CUP; CUP22-0011) from Merced County (County) to allow for the development, operation, and decommissioning of a community-scale photovoltaic solar energy facility herein referred to as the Dos Palos Clean Power Project (project).

The purpose of the project is to develop a renewable energy generation facility that would provide energy to the surrounding region. The project would include construction of a 3-megawatt (MW) alternating current (AC) photovoltaic solar energy facility, a 600-square-foot concrete equipment pad with an estimated 4.4-MW direct current (DC) and its associated inverters, fencing, and site improvements, including fencing and improvements to the existing access road and driveway approaches. The project would also include demolition of the existing on-site vacant residential structure built in 1935, the associated groundwater well, and the septic system. The proposed solar facility would encompass approximately 11.3 acres of the 39-acre site. The project would deliver power to the existing Pacific Gas and Electric Company (PG&E) power distribution network via an existing aboveground primary service interconnection utility pole located on the east side of Elgin Avenue. The project is anticipated to operate for approximately 35 years, after which the project would be decommissioned and the site would be restored to pre-project conditions. The preliminary project site plans are shown on Figure 2 and included in Appendix A.

1.4.1 *Solar Energy Generation*

Rows of solar arrays would be constructed within the 11.3-acre project area located on the eastern side of the project site. Each solar array would have a maximum height of 13.98 feet and a minimum ground clearance of 1 foot. Each row of solar arrays would be spaced approximately 10.8 feet apart. Solar arrays would be oriented in a north-to-south direction and would be installed on a single-axis tracking system that would rotate from east to west throughout the day (approximately 50 degrees in each direction). The tracking system would be installed on approximately 456 eight-inch by 13-inch posts, 68 eight-inch by 15-inch posts, and 8 eight-inch by 21-inch posts, all of which would be driven directly into the ground at a depth of approximately 6 to 10 feet. Power collection cables would be suspended from the tracking system in racks and would not require trenching. Specifications and dimensions of the solar arrays and tracking system would depend on the models that are selected at the time of construction.

1.4.2 *Equipment Pad and Electrical Equipment*

The project includes construction of a 20- by 30-foot concrete equipment pad to be located east of the proposed solar arrays and northwest of the existing on-site residential structure. Electrical equipment, including inverters, transformers, AC switchgear, and a photovoltaic (PV) system disconnect, would be housed in containers and secured to the concrete equipment pad. Transformers stored on the proposed equipment pad would have a kilovolt-ampere rating of 3MVA and be expected to generate a noise level of 64 decibels (dB) at a distance of 50 feet.

1.4.3 *Distribution Interconnection*

The project includes connection to PG&E's existing 12-kilovolt Dos Palos 1101 electrical circuit located on a utility pole immediately east of the project site on the east side of Elgin Avenue, which connects to the Dos Palos Substation bank 1, located at the intersection of Elgin and Christian Avenues approximately 2 miles south of the project site. The proposed interconnection would consist of one to eight poles between the project's electrical equipment and the point of interconnection on the distribution

system. The poles would be wooden or light-duty steel and would be approximately 75 feet in height, consistent with the height of existing distribution poles in the area. No upgrades to existing distribution facilities would be required.

1.4.4 *Site Improvements*

The project includes the installation of a 6-foot-tall chain-link fence with three strands of barbed wire on top to enclose the proposed solar arrays and equipment pad. Permanent lighting fixtures within the project site would be limited to those required by federal, state, and County building guidelines and equipment requirements, or as needed for security purposes. Lighting fixtures, if proposed, would be installed in a downward-facing direction and shielded as necessary to comply with applicable County standards.

The solar facility would be accessed via the existing 15-foot-wide, 84-foot-long access road that extends from Elgin Avenue. The project includes improvements to the existing access road and driveway approaches as needed to meet required County standards, such as minor widening, application of additional aggregate base, etc. The project would also require the trimming and/or removal of up to four trees on-site to provide adequate access to proposed facilities and to reduce shade on solar arrays.

1.4.5 *Construction*

Prior to site preparation and construction of the proposed solar facility, the project would require demolition of the existing vacant 840-square-foot residential structure, domestic groundwater well, and septic system located on the east side of the project site. For the purposes of this environmental review document, it is assumed that these structures would be demolished and removed from the project site prior to construction of the proposed solar facility in order to evaluate a reasonable worst-case scenario and conservatively evaluate project impacts.

The project has been designed to conform to the project site's existing topography and surface drainage patterns and would be constructed in a manner that minimizes overall ground disturbance. In addition, a 150-foot no-work buffer would be established around the two unpaved irrigation ditches on the project site during construction activities. Grading would be limited to select areas where ongoing access and power collection facilities would be located. In total, the project would result in approximately 2,178 square feet (0.05 acre) of ground disturbance, including 150 cubic yards of cut and fill, to be balanced on-site. Where necessary, loose and/or unstable soils would be compacted and flattened at the start of construction in order to stabilize the ground surface. All areas of temporary ground disturbance would be restored and stabilized following the completion of construction activities.

Construction equipment to be used during construction activities is expected to include, but not be limited to, haul trucks, a concrete truck, an excavator, a pile driving machine, a bobcat machine (skid-steer loader), and a forklift.

Construction worker and equipment access would be provided via the existing access road and driveway approach off of Elgin Avenue. The construction period is anticipated to begin in Fall 2023 and occur over a 6-month period. During peak construction activities, it is anticipated that up to approximately 50 construction workers would be on-site and no more than 50 daily truck trips would be required to transport material and equipment. Therefore, the average daily combined vehicle and truck trips during construction would be less than 100 trips per day. Construction activities are anticipated to occur Monday through Friday between the hours of 8:00 a.m. and 5:00 p.m. in accordance with applicable County standards.

~~1.4.6 Pollinator Habitat Program~~

~~The proposed project includes a Pollinator Habitat Program with the purpose of continuing agricultural activities at the site throughout the project's operational period, maintaining the existing topsoil and seedbank, enhancing the biological diversity of the project site, and providing some benefits to neighboring agricultural production and crop yields by increasing pollinator activities.~~

~~Following construction activities, pollinator-friendly vegetation (e.g., native perennials, shrubs, grasses, flowers) would be planted within the 11.3-acre fenced solar facility where vegetation clearance is not needed for safety and access purposes. Approximately 70% to 80% (7.91 to 9.04 acres) of the 11.3-acre project site would be maintained with pollinator-friendly vegetation for the life of the project.~~

~~A Pollinator Habitat Program Implementation Plan would be developed in coordination with Merced County as necessary prior to obtaining a Building Permit. The plan would include the following:~~

- ~~A site plan or map identifying areas where pollinator vegetation would be planted and where vegetation clearance is necessary for safety and access requirements.~~
- ~~Identification of appropriate native vegetation species that would be selected and planted to support the desired pollinator activities. The seed mix and vegetation species would be selected by a qualified specialist and would incorporate any input from the County. Species that require the minimum amount of water use and maintenance would be considered in addition to other goals.~~
- ~~Responsibilities and necessary qualifications for those responsible for preparing and overseeing implementation of the plan (i.e., botanist, landscape architect, or similar).~~
- ~~Planting and maintenance procedures, including details for any supplemental watering that may be needed to establish the vegetation.~~
- ~~Schedules for planting and maintenance for the life of the project.~~
- ~~Procedures to provide annual updates summarizing operational activities, as well as performance standards and measures taken to ensure the success of the pollinator habitat that would be provided to the County.~~
- ~~Adaptive management procedures to make any necessary changes to the program when appropriate and in coordination with the County.~~

~~1.4.7~~1.4.6 *Operation*

The proposed solar facility would operate year-round, 7 days a week, 24 hours a day, with the exception of down times for scheduled maintenance. Staff would be on-site periodically to inspect and maintain the project facilities and maintain vegetation; however, regular staff presence would not be required. It is anticipated that approximately two staff members would visit the project site approximately four times per year for regularly scheduled inspections and maintenance. The site is expected to have deliveries for equipment replacement once every 10 years. The solar PV panels would be dry cleaned once a year using a smart robot dry-cleaning system and would not require the regular use of water. The dry-cleaning system would automatically track and self-adapt to the height and inclination of solar panels for smooth operation.

~~1.4.8~~1.4.7 *Decommissioning*

The project would operate for 35 years. When the project reaches the end of its service life, the project would be decommissioned. Decommissioning and reclamation of the project site would include removal of the PV modules and recycling them or otherwise ensuring removal, removal of all ancillary facilities, and reclamation, revegetation, restoration, and soil stabilization to return the site to its preconstruction conditions.

A Decommissioning Plan would be developed for the project to ensure the facility would be completely decommissioned and removed using industry standards and best practices at the time of decommissioning. The Decommissioning Plan would be submitted to the County Community and Economic Development Department for review and approval. Pursuant to County General Plan Policy AG-3.11, the project applicant would establish any required financing for project decommissioning activities prior to approval of a Building Permit. The Decommissioning Plan would include the following:

- Removal of all above- and belowground improvements.
- Restoration of the surface grade, placement of topsoil over all removed structures, revegetation and erosion control as deemed necessary.
- A timeframe for infrastructure removal and site restoration; an engineer's cost estimate for all aspects of the removal and restoration plan.
- An agreement signed by the property owner and operator indicating that they take full responsibility to implement the Decommissioning Plan.
- A plan to comply with all state and federal requirements for removal of potentially hazardous waste.

1.5 Potential Authorizations, Permits, and Approvals

The potential authorizations, permits, reviews, and approvals from federal, state, and local agencies that would be required for the project are listed in Table 1.

Table 1. Potential Authorizations, Permits, Reviews, and Approvals

Permit / Approval / Consultation	Authorizing Agency
State	
CEQA Environmental Compliance	Merced County Community and Economic Development Department
National Pollutant Discharge System Storm Water Permit for Construction Activities	Regional Water Quality Control Board
Oversized/Heavy Load Permit	California Department of Transportation
California Endangered Species Act Compliance	California Department of Fish and Wildlife
Authority to Construct/Permit to Operate	San Joaquin Valley Air Pollution Control District
Local	
Hazardous Materials Business Plan	Merced County Community and Economic Development Department
Conditional Use Permit	Merced County Planning Commission~~Community and Economic Development Department~~

Permit / Approval / Consultation	Authorizing Agency
Building Permit	Merced County Community and Economic Development Department~~Merced County Department of Public Works~~

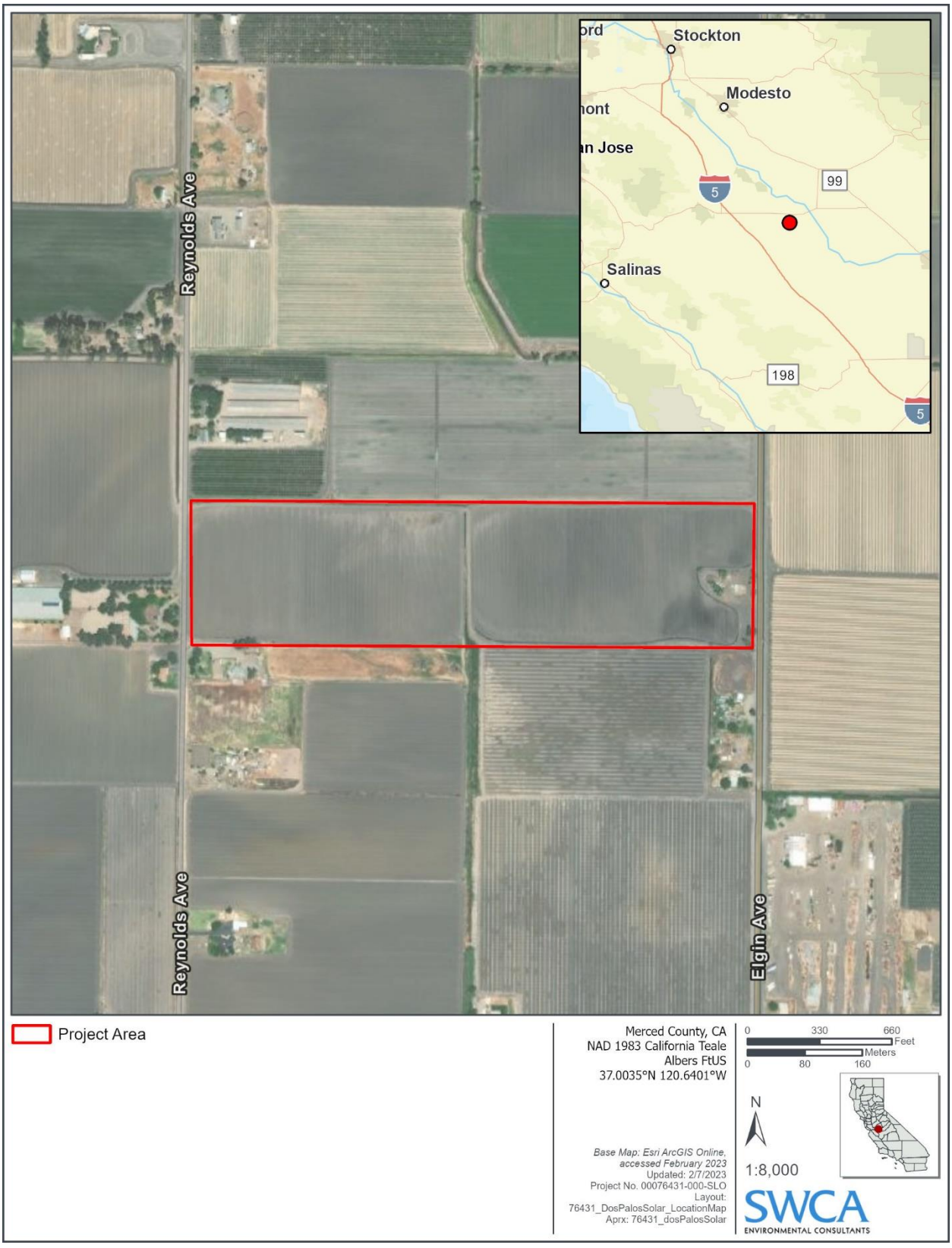

Figure 1. Project location map.

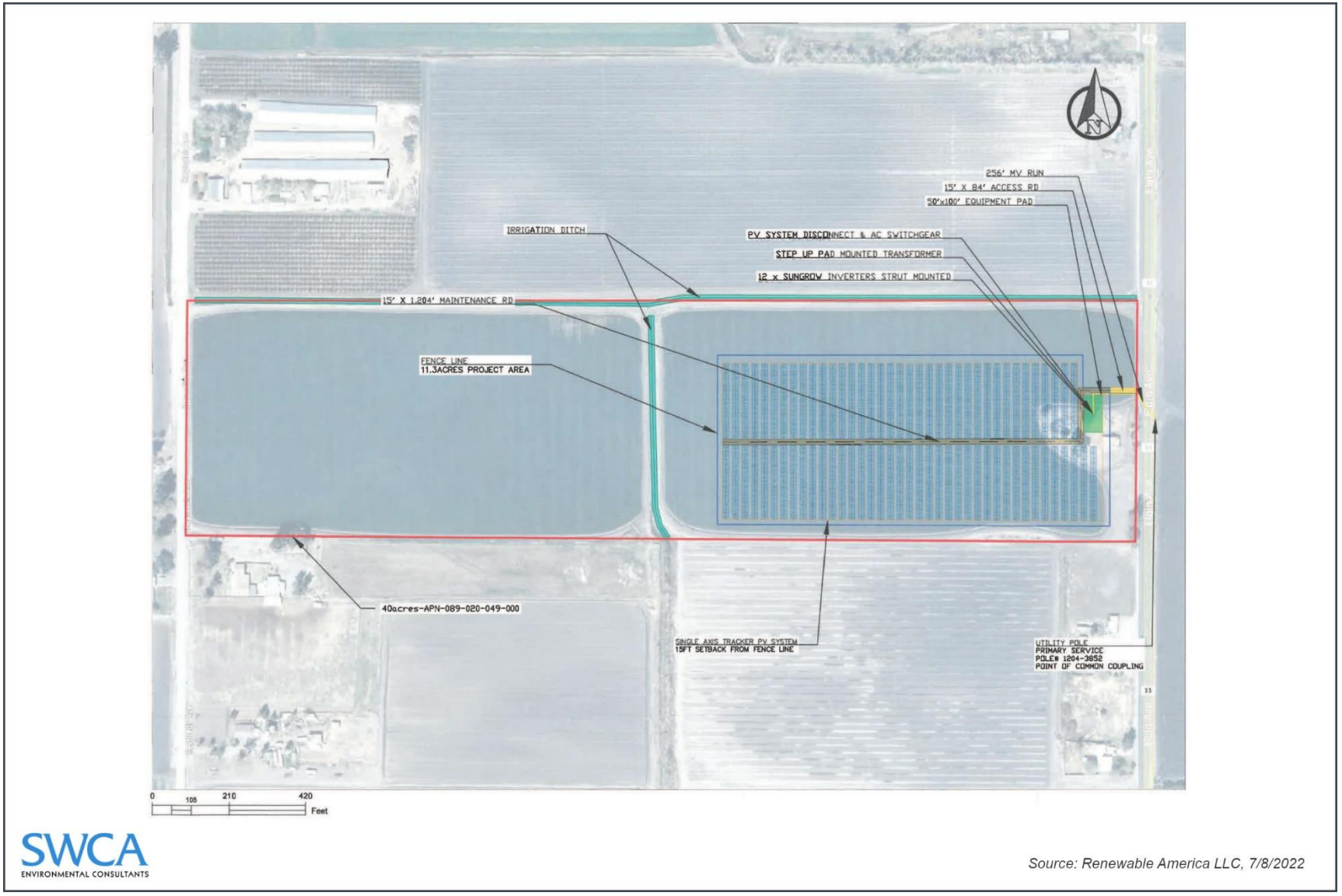

Figure 2. Site plan.

2 ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL EVALUATION

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The proposed project could have a "Potentially Significant Impact" for environmental factors checked below. Please refer to the attached pages for discussion on mitigation measures or project revisions to either reduce these impacts to less than significant levels or require further study.

☐ Aesthetics	☐ Greenhouse Gas Emissions	☐ Public Services
☒ Agriculture and Forestry Resources	☒ Hazards and Hazardous Materials	☐ Recreation
☒ Air Quality	☐ Hydrology and Water Quality	☐ Transportation
☒ Biological Resources	☒ Land Use and Planning	☒ Tribal Cultural Resources
☒ Cultural Resources	☐ Mineral Resources	☒ Utilities and Service Systems
☐ Energy	☒ Noise	☐ Wildfire
☐ Geology and Soils	☐ Population and Housing	☒ Mandatory Findings of Significance

ENVIRONMENTAL DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measure based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: 03/20/2023 **Signed:** Cameron Christie - Planner I

I. Aesthetics

Environmental Issues		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:					
(a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
(b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
(c)	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
(d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Setting

CEQA establishes that it is the policy of the state to take all action necessary to provide people of the state "with . . . enjoyment of aesthetic, natural, scenic and historic environmental qualities" (California Public Resources Code [PRC] Section 21001(b)). A scenic vista is generally defined as a high-quality view displaying good aesthetic and compositional values that can be seen from public viewpoints. Some scenic vistas are officially or informally designated by public agencies or other organizations. A substantial adverse effect on a scenic vista would occur if the project would significantly degrade the scenic landscape as viewed from public roads or other public areas. A proposed project's potential effect on a scenic vista is largely dependent on the degree to which it would complement or contrast with the natural setting, the degree to which it would be noticeable in the existing environment, and whether it detracts from or complements the scenic vista.

The California Scenic Highway Program was created by the State Legislature in 1963 with the intention of protecting and enhancing the natural scenic beauty of California highways and adjacent corridors. A highway may be designated scenic depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. According to the California Department of Transportation (Caltrans) State Scenic Highway System Map, there are no designated state scenic highways within or in the immediate vicinity of the project site. The nearest designated scenic highways are Interstate (I-) 5 and SR-152, located approximately 20 miles northwest of the project site (Caltrans 2018).

The *2030 Merced County General Plan Natural Resources Element* provides context for the existing visual character of the county and identifies policies to protect scenic resources in the county. The existing visual character of Merced County primarily consists of rural and agricultural landscapes, and scenic vistas include the Coastal and Sierra Nevada mountain ranges and the Los Banos, Merced, and San Joaquin Rivers and Bear Creek corridors. In addition, I-5 and SR-152 are designated scenic routes in parts of the county (Merced County 2013a). The following goal and policies would be applicable to the proposed project:

Goal NR-4: Protect scenic resources and vistas.

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-4.5: **Light Pollution Reduction.** 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 project site is located in a rural area, approximately 0.5 mile north of the city of Dos Palos. The project site supports a vacant residential structure, a domestic water well, septic system, and several clusters of trees and vegetation on the east side of the property, with the majority of the project site consisting of agricultural row crops (Figure 3). Surrounding land uses include agricultural cultivation, livestock uses, and scattered rural residences in all directions.

Figure 3. Photograph taken from the eastern portion of the project site facing north toward the vacant residential structure (December 22, 2022).

Environmental Evaluation

a) Would the project have a substantial adverse effect on a scenic vista?

Scenic vistas in the county include the Coastal and Sierra Nevada mountain ranges and the Los Banos, Merced, and San Joaquin Rivers and Bear Creek corridors (Merced County 2013a). The project site is not located within the viewshed of a scenic vista; therefore, the project would not have a substantial adverse effect on a scenic vista, and *no impacts* would occur.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The nearest designated scenic highways are I-5 and SR-152, located approximately 20 miles northwest of the project site (Caltrans 2018). Due to the distance, the project site would not be visible from I-5 or SR-152; therefore, the project would not damage scenic resources within the viewshed of a state scenic highway, and *no impacts* would occur.

c) In non-urbanized areas, would the project 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?

The project would establish a 11.3-acre PV solar power generation facility, which would consist of 13.98-foot-tall solar arrays with a 1-foot ground clearance, a 600-square-foot concrete equipment pad and its associated inverters, fencing, and improvements to the existing access road and driveway approaches. The County Code does not establish a maximum allowable height requirement for ground-mounted solar panels (Section 18.30.030). Each development area would be surrounded by an approximately 6-foot-tall chain-link perimeter fence with three strands of barbed wire at the top, which would impede views of the project from Elgin Avenue and other surrounding areas. The project includes demolition of the existing vacant residential structure and the associated groundwater well and septic system on-site. The project would also require the trimming and/or removal of up to four trees on-site to provide adequate access to proposed facilities and reduce shade on solar arrays; however, existing trees along Elgin Avenue would remain to avoid alteration of views of the site from Elgin Avenue. Following the 35-year lifespan of the proposed project, the project site would be returned to preconstruction conditions. The project would require the installation of approximately eight overhead power poles to connect to the Dos Palos Substation; however, installation of power poles would be consistent with the height, design, and scale of existing power poles in the area. Therefore, the project is not expected to substantially degrade the existing visual character or quality of public views in the project area, and potential impacts would be *less than significant*.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

New permanent lighting fixtures within the project site would be limited to those required by federal, state, and County building guidelines and equipment requirements, or as needed for security purposes. Lighting fixtures, if proposed, would be installed in a downward-facing direction and shielded as necessary to comply with County Code Section 18.40.070, which requires outdoor lighting to be designed and maintained to contain glare and reflection within the boundaries of the project site; be hooded, directed downward, and away from adjacent properties and public areas; avoid blinking, flashing, or unusually high intensity; and be similar in scale, intensity, and height to surrounding uses. Based on required compliance with the County Code, the project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area; therefore, impacts would be *less than significant.*

Conclusion

The project would not substantially affect a scenic vista, damage a scenic resource, conflict with zoning, or create a source of new light or glare; therefore, impacts related to aesthetics would be less than significant, and mitigation is not necessary.

Mitigation Measures

Mitigation is not necessary.

II. Agriculture and Forestry Resources

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
In determining whether impacts to 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 Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, 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. Would the project:				
(a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
(b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☒	☐	☐
(c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
(d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
(e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Setting

The California Department of Conservation (CDOC) Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and current land use. For environmental review purposes under CEQA, the FMMP categories of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land are considered "agricultural land." Other non-agricultural designations include, but are not limited to, Urban and Built-up Land, Other Land, and Water. According to the FMMP, the project site is located on land that is designated as Prime Farmland and Semi-agricultural and Rural Commercial Land (CDOC 2016).

According to the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey, the project site is underlain by the following soil types (NRCS 2022):

- **Dospalos clay, partially drained:** This poorly drained soil has a high runoff class and a depth to restrictive feature of more than 80 inches. The typical soil profile consists of clay and clay loam. This soil is considered Prime Farmland if irrigated.

- **Elnido clay loam, partially drained:** This poorly drained soil has a medium runoff class and a depth to restrictive feature of more than 80 inches. The typical soil profile consists of clay loam, sandy loam, and stratified sand to silt loam. This soil is considered Prime Farmland if irrigated.

The Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agriculture or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based on farming and open space uses as opposed to full market value. The project site is not subject to a Williamson Act contract.

According to PRC Section 12220(g), forest land is defined as land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. Timberland is defined as land, other than land owned by the federal government and land designated by the California Board of Forestry and Fire Protection as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. The project site and surrounding area is not considered forestland by PRC Section 12220(g).

The project site is located on land designated Agricultural in the County General Plan and is zoned A-1 (General Agricultural). The *2030 Merced County General Plan Agricultural Element* provides context for existing agricultural uses in the county and identifies goals and policies to protect, preserve, and enhance agricultural resources in the county. The following policy would be applicable to the proposed project:

> **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. In addition, these facilities should include dedications of agricultural land and habitat mitigation, measures to control erosion, and assurances for financing decommissioning activities.

In addition, Policy LU-2.7 of the *2030 Merced County General Plan Land Use Element* identifies solar generation facilities as an allowable use within the Agriculture land use designation (Merced County 2013a).

Title 9 of the County Code includes standards for implementation of the agricultural land conservation policies contained in the County General Plan related to permanently protecting agricultural land within the county. These standards include requiring mitigation for projects that include any of the following criteria:

1. A general plan amendment that changes the designation of any land from agricultural designation to a non-agricultural land use designation;
2. Rezoning of land in an agricultural zone to any other zone other than an agricultural zone;
3. Conversion to a non-agricultural or non-agricultural related use of any productive agricultural land with an agricultural designation or zoning as the result of approval of a discretionary application; or
4. Conversion of agricultural land within the boundary of a community plan where the county previously required mitigation through a certified environmental impact report.

Required mitigation includes arrangement for the imposition of an agricultural conservation easement on no less than 1 acre of mitigation land for each acre of land proposed for conversion, or other comparable mitigation such as payment into an established in-lieu fee program (County Code Sections 9.30.030 and 9.30.040). Exemptions from these standards are identified for legal parcels less than 5 acres in area, public uses, and habitat conservation projects. Mitigation alternatives are identified in County Code Section 9.30.040, which include, but are not limited to, payment of an in-lieu fee to a qualified entity.

Environmental Evaluation

a) 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?

The project site is located on land that is primarily designated as Prime Farmland with areas of land designated as Semi-agricultural and Rural Commercial Land (CDOC 2016). The project includes the construction and operation of an 11.3-acre PV solar power generation facility on a 39-acre parcel of land designated Agricultural in the County General Plan and zoned A-1 (General Agricultural). Solar generation facilities are an allowable use within the Agricultural land use designation (Merced County 2013a). Approximately 11.3 acres of existing row crops would be removed for development of the proposed project.

The project would result in the conversion of approximately 11.3 acres of Prime Farmland to non-agricultural uses for 35 years. The project has been designed to minimize ground disturbance, which includes using piles as foundations for the PV solar panel tracking systems and attaching cables to the tracking systems rather than digging trenches. Following the 35-year operational lifespan of the project, the project would be decommissioned and the site would be restored to preconstruction conditions, which would allow for long-term agricultural activities to occur on the project site. Further, existing row crop cultivation on the western side of the project site would not be removed or otherwise disturbed. Because the project would be decommissioned and the project site would be returned to preconstruction conditions following the 35-year lifespan of the project, implementation of the proposed project would not permanently convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use; therefore, impacts would be *less than significant*.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The project site is not currently subject to a Williamson Act contract. The project site is located within the County's Agriculture land use designation and is zoned A-1 (General Agricultural). According to Policy LU-2.7 of the County Land Use Element and Table 2-1 of the County Zoning Code, solar generation facilities are an allowable use within the Agriculture land use designation with a CUP. However, due to the proposed length of time the land would be converted to a non-agricultural use, the project would be subject to the standards set forth in County Code Section 9.30, Agricultural Mitigation. The standards set forth in County Code Section 9.30 are applicable to projects that would result in conversion (temporary or permanent) of land with an agricultural land use designation or zoning to a non-agricultural land use as the result of approval of a discretionary application. While project compliance with an applicable County Code policy is generally not considered mitigation under CEQA, Mitigation Measure (MM) AG-1 has been identified to specify mechanisms the project may demonstrate compliance with County Code Section 9.30. Compliance with County Code Section 9.30 would require the project applicant to establish an agricultural conservation easement of no less than 1 acre of mitigation land for each acre of land proposed for conversion, or pay an in-lieu fee in accordance with the criteria set forth in the County Code.

With implementation of Mitigation Measure MM AG-1, potential impacts associated with conflicts with existing zoning for agricultural use would be *less than significant with mitigation*.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

The project site and surrounding area is not within land zoned or otherwise designated as forest land, timberland, or timberland production; therefore, the proposed project would not conflict with the zoning, or cause rezoning of, designated forest land, timberland, or timberland production, and *no impacts* would occur.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

The project site and surrounding area is not designated or zoned for forest land uses and does not meet the definition of forest land established in PRC Section 12220(g). Since the project site does not support forest land, trimming or removal of four trees, if required for the project, would not result in the loss or conversion of forest land; therefore, *no impacts* would occur.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

The project includes the demolition of the existing residence, groundwater well, and septic system on-site, and the construction, operation, and eventual decommissioning of an 11.3-acre PV solar generation facility. Existing agricultural cultivation activities on-site currently rely on water provided by the Central California Irrigation District (CCID) and would not be affected by demolition of the groundwater well on-site, which was historically used for domestic purposes only. During operation of the project, the solar PV panels would be dry cleaned once a year using a smart robot dry-cleaning system and would not require the use of water; therefore, the proposed project would not result in new land uses that could reduce the availability of water for existing agricultural uses in the vicinity of the project site.

The project site would be accessed by a 15-foot-wide unpaved access road; however, the project would require minimal vehicle trips (approximately four inspections per year) along the driveway and would not generate substantial dust emissions that could inadvertently damage crops in the vicinity of the project site. Therefore, the project would not indirectly result in the conversion of farmland or forest land to non-agricultural use or non-forest use, and no impacts would occur.

Conclusion

The proposed project would not result in the conversion of forest land and would not interfere with zoning for agricultural or forest land uses. Impacts associated with the conversion of land with an agricultural land use designation to non-agricultural uses would be reduced to less than significant with implementation of Mitigation Measure MM AG-1. Therefore, impacts related to agriculture and forestry resources would be less than significant with mitigation.

Mitigation Measures

MM AG-1 At the time of application for building and construction permits, the project applicant shall offset impacts associated with conversion of productive agricultural land (defined as land designated "Prime Farmland," "Farmland of Statewide Importance," and "Unique

Farmland" by the California Department of Conservation as shown on their latest Important Farmland Map, prepared in accordance with the Farmland Mapping and Monitoring Program) to non-agricultural uses by implementing one of the options described below:

a. **Option 1. Agricultural Land Easement.** If Option 1 is selected, the project Applicant shall offset impacts associated with conversion of productive agricultural land to non-agricultural uses by arranging for the imposition of an agricultural conservation easement on no less than 1 acre of mitigation land for each acre of land proposed for conversion. The agricultural easement on mitigation land shall be held in perpetuity by a qualified entity that operates in Merced County, or by Merced County on a temporary basis until transferred to a qualified entity, and shall meet the following criteria (as detailed in Merced County Code Section 9.30.050):

    1. **Location.** The mitigation land shall be located within Merced County.
    2. **Land Uses.** The mitigation land is subject to an agricultural designation in the County General Plan and zoned for agricultural use and is located outside a city sphere of influence as adopted by the Local Agency Formation Commission of Merced County. The type of agricultural-related activity allowed on the mitigation land shall be specified in the easement and is at least as restrictive as the requirements of the agricultural zoning district. The agricultural easement shall prohibit all residential, commercial, or industrial development and any land uses or activities that substantially impair or diminish the agricultural productive capacity of the mitigation land or that are otherwise inconsistent with the conservation purposes of this chapter. Any legal nonconforming use of the mitigation land shall be abandoned prior to execution of the agricultural easement, or if maintained, will not interfere with agricultural use of the mitigation land.
    3. **Soil Quality.** The soil quality of the mitigation land shall have the agricultural productive capacity equivalent to or better than that of the land proposed for conversion.
    4. **Water Supply.** The available water supply for the mitigation land shall be at least equal to that of the land proposed for conversion in terms of quantity, quality, and security. The water supply on the agricultural mitigation land shall be protected in the farmland conservation easement or other document evidencing the agricultural mitigation.
    5. **Existing Interests and Encumbrances.** The mitigation land shall not be already subject to an encumbrance or interest that would legally or practicably prevent converting the land, in whole or in part, to a nonagricultural use, such as a conservation easement, open space easement, flowage easement, avigation easement, long-term agricultural lease, profit, or an interest in the subsurface estate that would preclude development of the surface estate. A contract entered pursuant to the Williamson Act shall not constitute an encumbrance for purposes of this section.
    6. **Physical Limitations.** There shall be no physical conditions or contamination on the mitigation land that would legally or practicably prevent converting the land, in whole or in part, to a nonagricultural use.

7. **Existing Home.** The mitigation land shall have no existing home, unless the land proposed for conversion includes an existing home.
8. **Public Ownership.** The mitigation land may be owned by a public agency if it is managed for compatible agricultural use in perpetuity similar to an agricultural easement placed on privately owned land.
9. **Permanently Preserve.** The mitigation land shall conform to the perpetuity requirements contained in Internal Revenue Service Code Section 170(h) to ensure the land will satisfy the intent of this ordinance to permanently preserve the agricultural land placed under easement.

b. **Option 2. Payment of an In-Lieu Fee.** As an alternative to Option 1 as detailed above, the applicant may choose to seek approval to implement the following alternative mitigation option, as detailed in Merced County Code Section 9.30.040:

1. **In-Lieu Fee.** An applicant for conversion may satisfy the mitigation obligation set forth in Merced County Code Section 9.30.030(B) by paying to a qualified entity a fee in lieu of conveying an agricultural easement. If a qualified entity is unwilling or unable to accept the in-lieu fee and acquire an agricultural easement, the in-lieu fee may be paid to Merced County.

Merced County shall establish the amount of in-lieu fees on a case-by-case basis unless the applicant for conversion has reached agreement on the fee amount with a qualified entity, or unless Merced County has previously adopted the resolution provided for in Merced County Code Section 9.30.040(B)(5).

c. **Option 3. Applicant-Designed Mitigation Options.** The applicant proposing conversion may propose an alternative method of mitigation for review and approval by Merced County subject to the requirements of the Merced County Code. Proposed alternative mitigation must satisfy all of the following criteria:

1. The proposed mitigation must result in permanent protection of mitigation land;
2. The applicant must bear all costs of reviewing, approving, managing, and enforcing the mitigation;
3. The proposed mitigation must be in substantial compliance with the requirements for mitigation land and agricultural easements set forth in Merced County Code Section 9.30.050; and
4. The proposed mitigation must be in all respects at least as protective of agricultural land as the mitigation required by the Merced County Code.

III. Air Quality

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
(a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
(c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
(d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☒	☐	☐

Setting

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act (CCAA) is its companion state law. These laws, and related regulations by the U.S. Environmental Protection Agency (USEPA) and California Air Resources Board (CARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). National and state standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter—which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$)—lead (Pb), and sulfur dioxide (SO_2). In addition, state standards exist for visibility-reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and California Ambient Air Quality Standards (CAAQS) are set at levels that protect public health with a margin of safety and are subject to periodic review and revision.

Merced County is located within the San Joaquin Valley Air Basin (SJVAB) and under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The San Joaquin Valley is prone to one of the most challenging air quality problems in the nation, as it is home to over 4,000,000 residents and includes several major metropolitan areas, vast expanses of agricultural land, industrial sources, highways, and schools. Under the NAAQS, the SJVAB is designated as Nonattainment-Extreme for the 8-hour O_3 standard, Maintenance-Serious for the PM_{10} standard, and Nonattainment-Moderate for the $PM_{2.5}$ standard. Under the CAAQS, the SJVAB is designated Nonattainment for the 1-hour O_3 standard, 8-hour O_3 standard, PM_{10} standards, and $PM_{2.5}$ standards.

The SJVAPCD has established air quality thresholds of significance for CO, nitrogen oxides (NO_X), reactive organic gases (ROG), sulfur oxides (SO_X), PM_{10}, and $PM_{2.5}$, as shown in Table 2.

Table 2. San Joaquin Valley Air Pollution Control District Thresholds

Pollutant/Precursor	Construction Emissions (TPY[1])	Operational Emissions (TPY[1])	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
CO	100	100	100
NO_X	10	10	10
ROG	10	10	10

SO_X	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Source: SJVAPCD (2015)

[1] TPY = tons per year

Ozone

Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. Here, at ground level, troposphere, or "bad," ozone is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level about 10 miles up where it meets the second layer, the stratosphere. The stratospheric, or "good," ozone layer extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

"Bad" ozone is what is known as a photochemical pollutant. It needs ROG, NO_X, and sunlight to form. ROG and NO_X are emitted from various sources throughout Merced County. Significant ozone formation generally requires an adequate number of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. To reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors.

Ozone is a regional air pollutant. It is generated over a large area and transported and spread by the wind. As the primary constituent of smog, ozone is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, it is not emitted directly into the air by specific sources but is created by sunlight acting on other air pollutants (the precursors), specifically ROG and NO_X. Sources of precursor gases number in the thousands and include common sources, such as consumer products, gasoline vapors, chemical solvents, and combustion byproducts of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. Thus, high ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

Combustion Emissions

Combustion emissions (ROG and NO_X) are most significant when using large diesel-fueled scrapers, loaders, bulldozers, haul trucks, compressors, generators, and other heavy equipment. Emissions can vary substantially from day to day, depending on the level of activity and the specific type of operation. ROG and NO_X are the critical pollutants caused by construction work because of the high output of these pollutants by the heavy diesel equipment normally used in grading operations.

Carbon Monoxide

CO, an odorless, colorless, poisonous gas that is highly reactive, is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is a byproduct of motor vehicle exhaust, which contributes more than 66% of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95% of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources, such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the

evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

Sulfates

Sulfates (SO_4^{-2}) are particulate products that come from the combustion of sulfur-containing fossil fuels. When sulfur monoxide (SO) or SO_2 is exposed to oxygen, it precipitates out into sulfates (SO_3 or SO_4). Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline, diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California because of regional meteorological features.

Particulate Matter

Particulate matter (PM_{10} and $PM_{2.5}$) pollution consists of very small liquid and solid particles floating in the air. Some particles are large and dark enough to be seen as soot or smoke, and others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals and can form when gases emitted from motor vehicles and industrial sources undergo chemical reactions in the atmosphere. Particulate matter or airborne dusts are the small particles that remain suspended in the air for long periods of time. Particulates of concern are PM_{10} and $PM_{2.5}$, which are small enough to be inhaled, pass through the respiratory system, and lodge in the lungs, possibly leading to adverse health effects; $PM_{2.5}$ is a subset of PM_{10}.

The composition of PM_{10} and $PM_{2.5}$ can vary greatly with time, location, the sources of the material, and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of PM_{10} and $PM_{2.5}$. In addition to those listed previously, secondary particles can also be formed as precipitates from photochemical reactions of gaseous SO_2 and NO_X in the atmosphere to create sulfates (SO_4) and nitrates (NO_3), respectively. Secondary particles are of greatest concern during the winter months when low inversion layers tend to trap the precursors of secondary particulates.

In the western United States, there are sources of PM_{10} in both urban and rural areas. PM_{10} and $PM_{2.5}$ are emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. Because particles originate from a variety of sources, their chemical and physical compositions vary widely.

The *2030 Merced County General Plan Air Quality Element* provides the following goals and policies related to the reduction of air pollutants and greenhouse gas (GHG) emissions that would be applicable to the proposed project:

Goal AQ-1: Reduce air pollutants and greenhouse gas emissions and anticipate adaptation due to future consequences of global and local climate change.

Goal AQ-4: Reduce traffic congestion and vehicle trips through more efficient infrastructure and support for trip reduction programs.

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.

Goal AQ-6: Improve air quality in Merced County by reducing emissions of PM_{10} 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 PM_{10} 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.

Environmental Evaluation

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

The SJVAPCD developed a Clean Air Plan (CAP) that utilizes extensive science and research, state of the art air quality management, and the best available information in developing a strategy to attain the federal health-based 1997, 2006, and 2012 NAAQS for $PM_{2.5}$ as expeditiously as possible (SJVAPCD 2018). The San Joaquin Valley is one of the fastest growing regions in the state, and the California Department of Finance (CDOF) projects that the population of the valley will increase by 19.3% between 2015 and 2030, while the state of California is only projected to increase by 12.5% in that same period (SJVAPCD 2018). An increase in population generally means there will be an increase in air pollutant emissions and vehicle miles traveled (VMT) (SJVAPCD 2018). The project does not include the development of new residences, businesses, or other uses that could induce population growth within the county. Operation of the project would not require regular staff presence and would result in approximately four vehicle trips per year for site inspection and maintenance activities and delivery trips for as-needed equipment replacement once every 10 years; therefore, the project would not significantly increase population growth, VMT, or associated vehicle emissions within the region, which would be consistent with the SJVAPCD CAP, and impacts would be *less than significant*.

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

The SJVAB is designated as Nonattainment-Extreme for the 8-hour O_3 standard, Maintenance-Serious for the PM_{10} standard, and Nonattainment-Moderate for the $PM_{2.5}$ standard under the NAAQS and as Nonattainment for the 1-hour O_3 standard, 8-hour O_3 standard, PM_{10} standards, and $PM_{2.5}$ standards under the CAAQS. The project would primarily generate emissions during construction of the proposed roadway improvements.

SHORT-TERM EMISSIONS

Heavy equipment and earth-moving construction activities generate fugitive dust and combustion emissions; these may have substantial temporary impacts on local air quality. Fugitive dust emissions would result from land clearing, demolition, excavation, grading activities, and trip generation. Combustion emissions, such as NO_X and PM_{10}, are most significant when using large diesel-fueled scrapers, loaders, bulldozers, haul trucks, compressors, generators, and other types of equipment.

Estimated construction air emissions were calculated for the proposed project by AMBIENT Air Quality & Noise Consulting (AMBIENT) using the California Emissions Estimator Model (CalEEMod). The CalEEMod results are included in Appendix B, and the results of the unmitigated estimated construction emission calculations for the proposed project are shown in Table 3.

Table 3. Annual Construction Emissions for the Proposed Project

	Criteria Pollutant (TPY[1])					
Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Total	0.07	0.58	0.78	<0.005	1.06	0.14
SJVAPCD Threshold	10	10	100	27	15	15
Exceed threshold?	*No*	*No*	*No*	*No*	*No*	*No*

Source: AMBIENT (2023)

[1] TPY = tons per year

Based on the results shown in Table 3, construction air emissions would comply with the SJVAPCD thresholds for all pollutants; therefore, construction-related impacts would be *less than significant*.

LONG-TERM EMISSIONS

The project would develop a 11.3-acre PV solar power generation facility and does not include the establishment of new land uses or activities that could generate long-term air pollutant emissions in the region. The project would result in approximately four vehicle trips per year for site inspection and maintenance activities and delivery trips for as-needed equipment replacement once every 10 years. The project would include improvements to the existing access road and driveway approaches as needed to meet required County standards, such as minor widening, application of additional aggregate base, etc. and would use this unpaved access during project operation. However, the project would require a limited number of trips along the unpaved roadway; therefore, use of the unpaved access road is not anticipated to generate emissions of fugitive dust in exceedance of local standards. Estimated operational air emissions were calculated for the proposed project using CalEEMod. The CalEEMod results are included in Appendix B, and the results of the unmitigated estimated operational emission calculations for the proposed project are shown in Table 4.

Table 4. Annual Operational Emissions for the Proposed Project

	Criteria Pollutant (TPY[1])					
Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Project Construction	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

SJVAPCD Threshold	**10**	**10**	**100**	**27**	**15**	**15**
Exceed threshold?	***No***	***No***	***No***	***No***	***No***	***No***

Source: AMBIENT (2023)

[1] TPY = tons per year

Based on the results shown in Table 4, the project would not be expected to exceed SJVAPCD operational thresholds; therefore, operational impacts would be *less than significant*.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

The project site is surrounded by scattered rural residences in all directions. The nearest sensitive receptor to the project site is located approximately 185 feet south of the southern boundary of the project site. There is an existing single-family residence in the eastern portion of the project site; however, the residence is currently vacant and would be demolished as part of the proposed project. Based on the close proximity of the nearest sensitive receptors, the proposed project has the potential to expose nearby residents to short-term construction-related emissions. As discussed in Impact Discussion III(b), construction of the project would generate emissions, including diesel particulate matter (DPM) and fugitive dust. Construction and operational emissions would not exceed SJVAPCD thresholds; however, due to the proximity of sensitive receptors, compliance with the SJVAPCD Standard Regulation VIII Control Measures and Mitigation Measures MM AQ-1 through MM AQ-3 would be required to reduce the potential for a nuisance and exposure to DPM and fugitive dust. Therefore, potential impacts would be *less than significant with mitigation*.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Construction activities generally have the potential to emit odors from diesel equipment, paints, solvents, fugitive dust, and adhesives. Any odors generated by construction activities would be intermittent and temporary, and generally would not extend beyond the construction area. Any construction odors would be temporary and limited to the construction phase of the proposed project. The project does not include the establishment of new land uses or other activities that could generate long-term odors within the project area. Therefore, any potential odors associated with the project would be short-term and intermittent.

The project is not located in an area with known potential for naturally occurring asbestos (NOA) (California Geologic Survey [CGS] 2011). Therefore, construction activities would not have the potential to expose workers or surrounding land uses to harmful levels of NOA. The project would require the demolition of existing on-site structures, including a vacant residence, a domestic water well, and a septic system that could release asbestos containing material (ACM) or lead-based paint if present within the building materials. Mitigation Measure MM AQ-4 requires the testing of building materials prior to demolition and identifies the proper protocol to be implemented in the event ACM or lead-based paint is present within building materials of the existing structures. With implementation of Mitigation Measure MM AQ-4, the project would not result in adverse odors or other emissions; therefore, impacts would be *less than significant with mitigation.*

Conclusion

The project would be consistent with the goals intended to reduce VMT outlined in the SJVAPCD CAP. The project would not generate construction-related or operational air pollutant emissions above SJVAPCD thresholds of significance. With compliance with SJVAPCD Standard Regulation VIII Control Measures and implementation of Mitigation Measures MM AQ-1 through MM AQ-3, the project

would not expose sensitive receptors to substantial pollutant concentrations. The project would not generate adverse odors and Mitigation Measure MM AQ-4 would reduce impacts related to other emissions, including ACM and lead-based paint. With implementation of Mitigation Measures MM AQ-1 through AQ-4, impacts related to air quality would be less than significant.

Mitigation Measures

MM AQ-1 **Permit Requirements.** Prior to ground disturbance and construction, the Construction Contractor shall obtain all required permits for dust control and the use of portable equipment, 50 horsepower or greater, from the San Joaquin Valley Air Pollution Control District. Upon application for construction permits, all required mitigation measures shall be shown on all applicable grading or construction plans and implemented during all applicable grading and construction activities.

MM AQ-2 **Dust Control Measures.** No person shall perform any construction, demolition, excavation, extraction, or other earth-moving activities unless measures are sufficiently implemented to limit visible dust emissions (VDE) to 20% opacity and comply with the conditions for a stabilized surface area when applicable. In addition to the requirements of this rule, a person shall comply with all other applicable requirements of San Joaquin Valley Air Pollution Control District Regulation VIII. An individual shall monitor the fugitive dust emissions to ensure the following requirements are met:

a. Pre-Activity:
    1. Pre-water site sufficient to limit VDE to 20% opacity, and
    2. Phase work to reduce the amount of disturbed surface area at any one time.

b. During Active Operations:
    1. Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity;
    2. Construct and maintain wind barriers sufficient to limit VDE to 20% opacity. If utilizing wind barriers, control measure 2.a above shall also be implemented; and
    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% opacity and meet the conditions of a stabilized unpaved road surface.

c. Temporary Stabilization During Periods of Inactivity:
    1. Restrict vehicular access to the area; and
    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 7 or more days, the area must comply with the conditions for a stabilized surface area as defined in section 3.58 of Rule 8011.

MM AQ-3 **Construction Emissions.** The project shall utilize clean off-road construction equipment, including the latest tier equipment, where feasible.

MM AQ-4 **Asbestos-Containing Material and Lead-Based Paint.** At the time of application for demolition permits, an asbestos-containing material (ACM) and lead-based paint survey

consisting of a visual inspection, sampling, testing, and reporting shall be performed to determine if building materials contain ACM and/or lead-based paint and would require special handling and disposal during demolition. If ACM is detected, proposed demolition activities shall be conducted in full compliance with the requirements stipulated in the National Emission Standards for Hazardous Air Pollutants (40 Code of Federal Regulations 61, Subpart M – Asbestos: National Emission Standards for Hazardous Air Pollutants). If elevated concentrations of metals from lead-based paint are detected, demolition activities shall be conducted in full compliance with the requirements of Sections 402 and 406 of the Toxic Substances Control Act. If survey results are negative, the survey report shall be submitted to Merced County in tandem with the application for demolition permits. If survey results are positive for either ACM or lead-based paint, the survey report shall be submitted to both Merced County and the San Joaquin Valley Air Pollution Control District.

IV. Biological Resources

	Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
(a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
(b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☒	☐
(c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
(d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
(e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
(f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Setting

The federal Endangered Species Act (FESA) of 1973 provides legislation to protect federally listed plant and wildlife species and requires that the responsible agency or individual consult with the U.S. Fish and Wildlife Service (USFWS) to determine the extent of impact to a particular species. If the USFWS

determines that impacts to a species would likely occur, alternatives and measures to avoid or reduce impacts must be identified.

The Migratory Bird Treaty Act (MBTA) of 1918 protects all migratory birds, including their eggs, nests, and feathers. The MBTA was originally drafted to put an end to the commercial trade of bird feathers, popular in the latter part of the 1800s. The MBTA is enforced by the USFWS, and potential impacts to species protected under the MBTA are evaluated by the USFWS in consultation with other federal agencies.

The California Endangered Species Act (CESA) of 1970 ensures legal protection for plants and wildlife formally listed as endangered or threatened by the State of California. California Fish and Game Code (CFGC) Sections 2080 and 2081 prohibits the take (defined as hunting, pursuing, catching, capturing, or killing) of endangered, threatened, or candidate species unless otherwise authorized by permit. The California Department of Fish and Wildlife (CDFW) regulates activities that may result in the "take" of such species. The CESA has a much less inclusive definition of "take" (limited to direct take such as hunting, shooting, capturing, etc.) that does not include the broad "harm" and "harassment" definitions in federal law.

CFGC Sections 3511, 4700, 5050, and 5515 include provisions to protect Fully Protected species, such as: (1) prohibiting take or possession "at any time" of the species listed in the statute, with few exceptions; (2) stating that "no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to "take" the species;" and (3) stating that no previously issued permits or licenses for take of the species "shall have any force or effect" for authorizing take or possession. The CDFW is unable to authorize incidental take of Fully Protected species when activities are proposed in areas inhabited by those species; therefore, project-related activities must avoid take of Fully Protected species.

The CDFW also maintains a list of California Species of Special Concern (SSC). Species are given this designation based on limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. Under state law, the CDFW is empowered to review projects for their potential to impact state-listed and SSC species and their habitats.

CFGC Section 3503, Protections of Bird's Nests, includes provisions to protect the nests and eggs of birds. CFGC Section 3503 states: "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." In addition, CFGC Section 3513 states that it is unlawful to take or possess any migratory bird as designated in the MBTA or any part of such migratory birds except as provided by rules and regulations under provisions of the MBTA.

Methods

The following impact analysis for biological resources is based on a desktop review, including a review of Google Earth and other publicly available aerial imagery, and a reconnaissance-level field survey of the project site. Soil types in the vicinity of the project site were reviewed using the NRCS Web Soil Survey (NRCS 2022). The USFWS National Wetlands Inventory (NWI) and U.S. Geological Survey (USGS) National Hydrography Dataset (NHD) were reviewed to determine the potential for wetlands, riparian habitat, or other jurisdictional features to occur in the study area (USFWS 2022; USGS 2022b).

Three databases were queried to assess the potential for special-status species to occur in the project vicinity. The first was a query of the CDFW California Natural Diversity Database (CNDDB) (CNDDB 2022) to identify special-status plant and wildlife species that have reported occurrences and/or are considered to have potential to occur within the Arena, California USGS 7.5-minute quadrangle and the

adjacent quadrangles: San Luis Ranch, Turner Ranch, Sandy Mush, Los Banos, Delta Ranch, Santa Rita Bridge, Charleston School, Dos Palos, and Oxalis. Second, the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants of California (CNPS 2022) was reviewed for the same quadrangles to provide additional information on rare plants that are known to occur in the area. Finally, the USFWS Information Planning and Consultation (IPaC) tool (USFWS 2022) was queried to identify any other federally listed resources that need to be addressed in relation to the project.

A reconnaissance-level field survey of the project site was conducted by SWCA Environmental Consultants (SWCA) Staff Biologist Paris Krause on December 22, 2022, to assess the habitat types present and the suitability of the site to support special-status species.

Site Conditions

The project site is relatively flat with elevation ranging from 100 to 115 feet (30 to 45 meters) above mean sea level. Two soil types occur within the study area: Dospalos clay, partially drained, 0 to 2 percent slopes, and Elnido clay loam, partially drained, 0 to 2 percent slopes. They are both poorly drained, non-hydric soils and considered Prime Farmland if irrigated. Being Prime Farmland, the project site has been used for active agricultural activities for several decades and is still actively used for agriculture. Based on observations made during the reconnaissance survey, the site appears to primarily be used for corn, grass crops, or other row crops.

Vegetation was minimal during the survey due to recent discing activity (see Figure 3). A vacant residence and one small accessory outbuilding are located adjacent to the disced field on the eastern side of the project site. Landscaped trees surround the residence. Tree species in this area include Athel tamarisk (*Tamarix aphylla),* eucalyptus (*Eucalyptus* spp.), Mexican fan palm (*Washingtonia robusta*), and other unidentified ornamental and fruit trees. No other landscaping is present around the residence. Additional ruderal vegetation around the residence includes mustard (*Brassica spp*.), alkali mallow (*Malva leprosa*), grasses in early cotyledon form (*Bromus* sp., *Avena* sp.), and annual nettle (*Urtica urens*). A large brush pile of woody debris is piled adjacent to the residence, approximately 10 feet high and 30 feet by 40 feet in size. The center of the project site consists of a fallow agricultural field, which was mostly devoid of vegetation except for a few weedy species that were in too early a stage to identify due to recent discing and time of year.

Two irrigation ditches occur on the project site, outside of the project area. One irrigation ditch runs in an east-to-west direction along the northern boundary of the project site, and the other runs in a north-to-south direction to the west of the proposed project development area. The northern irrigation ditch has been recently mowed with remnants of cattail (*Typha* sp.). The western ditch had not been mowed at the time of the survey and was dominated by cattail and Himalayan blackberry (*Rubus discolor*). Other species present in or around the irrigation ditch include saltbush (*Atriplex* sp.), bromes (*Bromus* spp.), lesser swine-cress (*Lepidium didymium*), telegraph weed (*Heterotheca grandiflora*), and bindweed (*Convolvulus* sp.). The dirt access road surrounding the project area supports similar species as the ditches, and also includes tumbleweed (*Salsola* sp.), barley (*Hordeum* sp.), mustard (*Brassica* spp.), and alkali mallow (*Malva leprosa*).

The trees on-site provide suitable habitat for nesting birds. Bird species observed on the project site included white crowned sparrows (*Zonotrichia leucophrys*), American crows (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), rock pigeon (*Columba livia*), Say's phoebe (*Sayornis saya*), yellow-rumped warbler (*Dendroica coronate*), and loggerhead shrike (*Lanius ludovicianus*). The loggerhead shrike was observed perched on an adjacent orchard tree north of the project. No raptors were observed.

One stick nest, 10 to 18 inches in diameter, was observed in a large tamarix (*Tamarix aphylla*) tree on the northwest side of the residence on site. An additional stick nest was observed approximately 0.25 mile north of the project site. Mammal tracks and scat was observed at the project site. Mammal species tracks and scat on the project site included raccoons (*Procyon lotor*), coyotes (*Canis latrans*), dogs (*Canis familiaris*), and a fox (*Vulpes* sp.). Small 2- to 3-inch burrows were observed along the banks of both irrigation ditches. No suitable burrows were observed for any of the above-listed species.

The exterior of the residence on-site was inspected for evidence of bats. No bats or evidence of bats, including guano or urine staining, was observed.

Special-Status Plants

Based on background review of species known to occur within the region, soil conditions, and general habitat conditions of the project area, it was determined that 23 special-status plant species have potential to occur within the project area (see Appendix C). However, the special-status plant species from the database searches occur in areas with vernal pool wetlands, alkaline soils, serpentine soils, valley and foothill grassland habitat, riparian areas, seeps, and vernally mesic areas. Based on site conditions observed during the reconnaissance survey, none of these habitats are present within the project site. Therefore, special-status plant species are not expected to occur within the project site.

Special-Status Wildlife

The background review identified 32 special-status wildlife species that have the potential to occur within the project region (i.e., within the nine USGS quadrangles searched and the USFWS IPaC query; see Appendix C). The list of special-status wildlife species is considered regional; therefore, an analysis of the range and habitat preferences of those species was conducted to identify which sensitive wildlife species have the potential to occur within or near the project site. Based on this analysis, it was determined that the following special-status wildlife species have potential to occur within the project area:

- Nesting migratory birds
- Loggerhead shrike (*Lanius ludovicianus*)
- Tricolored blackbird (*Agelaius tricolor*)
- Burrowing owl (*Athene cunicularia*)
- Swainson's hawk (*Buteo swainsoni*)
- San Joaquin kit fox (*Vulpes macrotis mutica*)

Environmental Evaluation

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

Special-Status Plant Species

For the purposes of this analysis, special-status plant species are defined as the following:

- Plants listed or proposed for listing as threatened or endangered under the FESA (Code of Federal Regulations [CFR] Title 50, Section 17.12 for listed plants and various notices in the *Federal Register* for proposed species).
- Plants that are candidates for possible future listing as threatened or endangered under the FESA.
- Plants that meet the definitions of rare or endangered species under CEQA (State CEQA Guidelines Section 15380).
- Plants considered by the CNPS to be "rare, threatened, or endangered" in California (California Rare Plant Ranks [CRPR] 1, 2, and 3).
- Plants listed by the CNPS as plants about which we need more information and plants of limited distribution (CRPR 4).
- Plants listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 California Code of Regulations [CCR] Section 670.5).
- Plants listed as rare under the California Native Plant Protection Act (CFGC Section 1900 et seq.).

The background review identified 23 special-status plant species that have the potential to occur in the vicinity of the project site (i.e., within the nine USGS quadrangles searched; see Appendix C). The project site has been heavily modified by agricultural land uses for several decades and contains little native vegetation. The majority of the special-status plant species from the database searches occur in areas with vernal pool wetlands, alkaline soils, serpentine soils, valley and foothill grassland habitat, riparian areas, seeps, and vernally mesic areas (see Appendix C). There was no evidence or records of vernal pools located on the project site. The closest CNDDB occurrence of a special-status plant species to the project site is Sanford's arrowhead (*Sagittaria sanfordii*), which is located approximately 1.4 miles north; however, this observation was made in 1948. It was resurveyed in 1980 and no plants were found. The only other special-status plant species record within 10 miles of the project site is hispid salty bird's-beak (*Chloropyron molle* ssp. *hispidum*) in alkaline salt flat habitat, which is not present in the project site. Given the minimal presence of native vegetation and previous land use disturbance, the project site does not provide suitable habitat for any special-status plant species. Therefore, the project would not result in impacts to any special-status plant species, and *no impacts* would occur.

Special-Status Wildlife Species

For the purposes of this analysis, special-status wildlife species are defined as the following:

- Wildlife listed or proposed for listing as threatened or endangered under the FESA (50 CFR 17.11 for listed wildlife and various notices in the *Federal Register* for proposed species).
- Wildlife that are candidates for possible future listing as threatened or endangered under the FESA.
- Wildlife that meet the definitions of rare or endangered species under CEQA (State CEQA Guidelines Section 15380).
- Wildlife listed or proposed for listing by the State of California as threatened and endangered under the CESA (14 CCR Section 670.5).
- Wildlife SSC to the CDFW.
- Wildlife species that are fully protected in California (CFGC Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

The background review identified 32 special-status wildlife species that have the potential to occur within the project region (i.e., within the nine USGS quadrangles searched and the USFWS IPaC query; see Appendix C). The list of special-status wildlife species is considered regional; therefore, an analysis of the range and habitat preferences of those species was conducted to identify which sensitive wildlife species have the potential to occur within or near the project site. Based on this analysis, it was determined that the project site supports suitable foraging and nesting habitat for Swainson's hawk and loggerhead shrike, and marginal suitable foraging and nesting habitat for tricolored blackbird and burrowing owl. The trees and intact irrigation ditch vegetation in the project site also provide suitable nesting habitat for migratory bird species. These species are discussed in further detail below. In addition, a fox track was observed on the site, therefore, the potential for San Joaquin kit fox to occur is also discussed in more detail below.

NESTING MIGRATORY BIRDS

All the vegetation on the project site has the potential to provide nesting habitat for migratory birds. To avoid impacts to these special-status species and to migratory birds, Mitigation Measure MM BIO-1, which would require preconstruction nesting bird surveys, and avoidance buffers if necessary, has been included. Therefore, impacts would be *less than significant with mitigation.*

LOGGERHEAD SHRIKE

Loggerhead shrike is considered an SSC by the CDFW and is known to occur in grassland and shrubland and agricultural areas in the Central Valley. It is a medium-sized passerine (perching) bird that ranges from southern Canada to southern Mexico and from the Gulf States west into California. Loggerhead shrike has both migratory and year-long residents and is more common in the Central Valley during the winter migration. This species prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. The loggerhead shrike is the only known predatory songbird. The species preys on vertebrates and invertebrates, and often impale their prey on barbed wire or trees because they lack talons or claws. The loggerhead shrike's diet consists primarily of insects, amphibians, and small mammals and birds. Nests are built on a stable branch in a densely foliaged shrub or tree, usually well-concealed and 1.3 to 50 feet aboveground. Females lay four to eight eggs from March into May, incubation lasts 14 to 15 days, and young become independent in July or August. Young are tended by both parents and leave the nest at 18 to 19 days (Zeiner et al. 1990).

A loggerhead shrike was observed perched in the orchard north of the project site during the December 2022 survey. No records of loggerhead shrike exist within the nine-quadrangle search radius of the project; however, this species is widespread throughout California and is underreported in the CNDDB. The closest CNDDB record is approximately 23 miles north of the project site (#109) in the San Luis National Wildlife Refuge. The project site offers foraging and nesting habitat in the landscaped trees around the residence and adjacent orchard. The landscaped trees around the residence could potentially provide suitable nesting habitat for loggerhead shrike. Preconstruction surveys are recommended to reverify absence (MM BIO-1) of loggerhead shrike, and if a loggerhead shrike nest is observed during preconstruction surveys or during construction, mitigation has been recommended to avoid impacts (MM BIO-1). Therefore, impacts to loggerhead shrike would be *less than significant with mitigation.*

TRICOLORED BLACKBIRD

Tricolored blackbird is considered a state threatened species protected under the CESA and is known to occur in riparian areas in the Central Valley. This species breeds near freshwater, preferably in emergent wetlands, and forages in grasslands and croplands. Tricolored blackbird usually nests in dense cattails or tules (*Scirpus* spp.); thickets of willow, blackberry, and wild rose (*Rosa californica*); and tall forbs. Mud or plant material nests are usually located a few feet over, or near, freshwater, or may be hidden on the

ground among low vegetation. The breeding season typically ranges from mid-April into late July. Males are polygynous, and each male may have several mates nesting in his small territory. A colony varies in size from a minimum of about 50 nests to over 20,000 in an area of 4 hectares (10 acres), or less. Clutch size ranges from two to six eggs, and mating pairs may raise two broods per year. Young birds fledge at about 13 days. Typical food items are arthropods and seeds.

The closest CNDDB occurrence is approximately 2 miles southwest (#661) of the project site. The irrigation canal to the north of the project site is regularly mowed and does not provide suitable habitat for foraging or nesting for the tricolored blackbird. However, the irrigation ditch approximately 200 feet west of the project development site was not mowed at the time of the survey in December 2022 and provides marginal habitat for nesting and foraging. Even though cattails are present in the western irrigation ditch, the cattail habitat is likely too small in size to support a breeding colony. Tricolored blackbird is not anticipated to occur within the proposed project site, but preconstruction surveys are recommended to reverify absence (MM BIO-1); if a tricolored blackbird nest is observed during preconstruction surveys or during construction, mitigation has been recommended to avoid impacts (MM BIO-1). Therefore, impacts to tricolored blackbird would be *less than significant with mitigation.*

BURROWING OWL

Burrowing owl is considered an SSC by the CDFW and is known to occur in agricultural areas in the Central Valley if the vegetation structure is suitable and there are useable burrows and foraging habitat in proximity (CDFW 2012). The closest CNDDB occurrence (#1941) is approximately 6.5 miles south of the project site in Fresno County. The banks of the irrigation ditch on the north side of the project site could potentially provide suitable habitat for burrowing owl, but no large burrows or California ground squirrel (*Spermophilus beecheyi*) were observed during the site visit; only smaller mammal burrows were observed. Burrowing owl prefers short sparse vegetation, and the disced field provides suitable foraging habitat for this species if suitable nesting habitat is present. The limiting factor making the site only marginally suitable is the lack of ground squirrels and lack of evidence of large burrows suitable for nesting. Burrowing owl is not anticipated to occur within the project site, but preconstruction surveys are recommended to reverify absence (MM BIO-2); if a burrowing owl is observed during preconstruction surveys or during construction, mitigation has been recommended to avoid impacts (MM BIO-3 and MM BIO-4) per the methods outlined in the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Therefore, impacts to burrowing owl would be *less than significant with mitigation.*

SWAINSON'S HAWK

Swainson's hawk is a state threatened species protected under the CESA. Historically, this species foraged over open stands of grassland, but as open stands of grassland have vanished throughout most of their range, they have shifted their foraging strategy to rely more heavily on agricultural crops; so much so, that they have become almost entirely dependent on a diverse matrix of crops to provide multiple foraging opportunities over time. Suitability of foraging habitat is highly dependent on the amount and distribution of different crop types and the small mammal communities associated with them. In the Central Valley, Estep (1989) ranked the following agricultural habitats in terms of their relative importance to foraging hawks: alfalfa, disced fields, fallow fields, dry-land pasture, beets, tomatoes, irrigated pasture, grains, other row crops, and other habitats. Estep (1989) found that Swainson's hawks use disced fields for foraging on insects, a small, but readily available and easily obtainable food source.

The project site contains suitable foraging habitat and several of the trees around the residence provide suitable nesting habitat for Swainson's hawk. The closest CNDDB occurrence (#2481) is a nest recorded approximately 3.6 miles north of project site along SR-152. The second closest occurrence (#2482) is another nest recorded approximately 4.1 miles northeast of the project site also along SR-152. No Swainson's hawk was observed during the survey.

The CDFW requires consultation if project activities would occur within a 0.5-mile radius of a known nest. There are no known nest records within 0.5 mile of the project site, but there is suitable nesting habitat on-site and in the immediate vicinity. Additionally, one stick nest was observed on the project site and another within 0.5 miles north of the project site. Therefore, Mitigation Measures MM BIO-5 and MM BIO-6 have been included and would require Swainson's hawk nesting surveys to be conducted following CDFW's recommended protocol (Swainson's Hawk Technical Advisory Committee [SHTAC] 2000). If an active nest is found within 0.5 mile of the project site, the applicant would be required to consult with CDFW to determine if an Incidental Take Permit (ITP) is required and implement measures to avoid take of Swainson's hawk. Such measures may include, but may not be limited to, implementation of avoidance buffers, seasonal restrictions of project activities during the nesting season; and acquisition of Swainson's hawk conservation lands and/or bank credits. With the incorporation of Mitigation Measures MM BIO-5 and MM BIO-6, impacts would be *less than significant with mitigation.*

SAN JOAQUIN KIT FOX

San Joaquin kit fox is listed as endangered under the FESA and threatened under the CESA. The range of this species in the San Joaquin Valley extends from southern Kern County north to Contra Costa, Alameda, and San Joaquin Counties on the western side of the valley, and to the La Grange area of Stanislaus County on the eastern side of the valley (USFWS 2020). Kit foxes are primarily found in association with Valley Sink Scrub, interior Coast Range Saltbush Scrub, Upper Sonoran Subshrub Scrub, Annual Grassland, and other grassland vegetation communities (USFWS 2020). However, they can also be found in human-altered habitats such as grazed grasslands and urban areas (Cypher et al. 2021) and can survive adjacent to tilled or fallow fields (Warrick et al. 2007). Cypher et al. (2021) described a thriving urban population of kit foxes in Bakersfield and suggest that they might thrive in other cities within the historic range such as Delano, Tulare, Hanford, Visalia, Fresno, Los Banos, Patterson, and possibly others. Warrick et al. (2007) found kit fox inhabiting aqueduct rights-of-way bordered by farmland and that foxes frequently travel up to 1.1 kilometers into annual crops and up to 1.5 kilometers into orchards. Kit foxes ranged into orchards and annual croplands at night, but almost never occupied these areas during the day (Warrick et al. 2007). The lack of den sites and low prey availability within farmland probably limited the ability of kit foxes to exploit and occupy these areas.

The project site is located in a "gap" in CNDDB records between areas east of the San Joaquin River and west of I-5. There are three historic (pre-1975) occurrences approximately 10, 11 and 12 miles south of the project site. However, there is one recent (unprocessed) CNDDB occurrence record in northern Fresno County, approximately 5.5 miles south of the project site, adjacent to the main canal on an undeveloped parcel dominated by saltgrass wetland (CNDDB 2022). Given the current and historic CNDDB records, San Joaquin kit fox is highly unlikely to occur on the project site. Even though this species is known to inhabit urban areas, there is no evidence of an urban population inhabiting Dos Palos. The project site does not occur within 3 miles of foothill grasslands or extensive valley grasslands and there was no evidence of large burrows suitable for dens along the irrigation ditches. Nevertheless, a preconstruction survey and *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* is recommended to avoid impacts in the event San Joaquin kit fox pass through the project area during construction activities (MM BIO-7). Therefore, impacts would be *less than significant with mitigation.*

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

Five different sensitive natural communities were identified in the CNDDB search for the Arena, California USGS 7.5-minute quadrangle and surrounding quadrangles. These are northern claypan vernal

pools, valley sacaton grassland, valley sink scrub, cismontane alkali marsh, and coastal and valley freshwater marsh. None of these sensitive natural communities were observed within the project site. The project would avoid the marginal riparian habitat associated with the irrigation ditches and does not support any other sensitive natural community identified in local or regional plans, policies, or regulations. At most, there may be some minor indirect impacts to the marginal riparian habitat in the ditch during construction (e.g., erosion); however, project impacts are considered *less than significant*.

c) Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

A 150-foot buffer would be established around the two unpaved irrigation ditches on the project site, and the marginal riparian habitat that is supported by these ditches is outside of the project impact area. These irrigation ditches are identified in the NWI and NHD as excavated by humans. A formal jurisdictional delineation was not conducted during the site visit. No other wetlands were observed or mapped on the project site. The irrigation ditches are located outside of the project area and would not be directly impacted by project activities. Indirect impacts such as erosion and sedimentation would be minimal based on the project's overall area site disturbance being limited to 0.05 acre; therefore, impacts would be *less than significant*.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The project site is located in an agricultural area 1.3 miles north of the city of Dos Palos and does not support any known corridors of natural habitat that facilitate wildlife movement. The solar panels would be elevated off the ground; therefore, it would not substantially block the movement of reptiles or small mammals across the project site. A 6-foot-tall chain-link fence with three strands of barbed wire on top would also be installed around the 8.5-acre project site to enclose the proposed solar arrays and equipment pad. The chain-link fence is also unlikely to substantially block the movement of reptiles, birds, or small mammals across the project site, and only slightly impede larger mammals from crossing the site. The project site does not support fish movement corridors or wildlife nursery sites. The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species and there would be no impacts on established native resident or migratory wildlife corridors or native wildlife nursery sites. Therefore, project impacts are considered *less than significant*.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The County Natural Resources Element identifies several policies pertaining to the preservation and protection of biological resources within the county, including protection of natural lands and special habitats (including, but not limited to wetlands, vernal pools, wildlife movement and migration corridors, etc.), establishment of wetland and riparian habitat buffers, wetland avoidance and setbacks, and incorporation of state and federal special-status species surveys and mitigation requirements in the County's review processes for public and private projects. The project site would not result in any potentially significant impacts to sensitive habitats, such as riparian habitats, wetlands, or wildlife migratory corridors. The project would not result in the removal of any locally-important tree species, as the on-site trees that would be trimmed and/or removed are non-native and planted. Therefore, it would not conflict with any local policies or ordinances, and *no impacts* would occur.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Based on the records and literature research conducted for the project, the project site does not overlap with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other conservation plans. Therefore, the project would not conflict with any approved local, regional, or state habitat conservation plans, and *no impacts* would occur.

Conclusion

The project site supports suitable foraging and nesting habitat for Swainson's hawk and marginally suitable habitat for burrowing owl and loggerhead shrike. Vegetation on the project site also provides suitable nesting habitat for migratory bird species. Preconstruction nesting bird surveys have been identified in Mitigation Measure MM BIO-1 to prevent potential impacts to loggerhead shrike and other nesting migratory bird species. There is marginal habitat for burrowing owl due to the lack of suitable nest burrows and ground squirrels. Therefore, preconstruction surveys for burrowing owl have been identified per Mitigation Measure MM BIO-2 and, if present, Mitigation Measures MM BIO-3 and MM BIO-4 have been identified to avoid and mitigate take, if present. There is a potential for Swainson's hawk to nest within 0.5 mile of the project site; therefore, Mitigation Measures MM BIO-5 and MM BIO-6 have been identified to require protocol-level nest surveys for Swainson's hawk within 0.5 mile of the project site and consultation with the CDFW if hawks are found within 0.5 mile of the project site. The project site provides marginally suitable foraging habitat for San Joaquin kit fox; therefore, Mitigation Measures MM BIO 7 through MM BIO 9 have been identified to avoid impacts to San Joaquin kit fox during construction activities if San Joaquin kit fox sign, potential or known San Joaquin kit fox dens are identified on or near the project site prior to construction activities. Therefore, impacts on biological resources would be *less than significant with mitigation*.

Mitigation Measures

MM BIO-1 **Nesting Bird Surveys.** If demolition, site preparation, and/or construction activities are proposed during the typical nesting bird season (February 1–September 15), a nesting bird survey shall be conducted by a qualified biologist no more than 10 days prior to the start of demolition and/or ground disturbance activities to determine presence/absence of nesting birds. Surveys shall cover all areas potentially affected by the project via direct impacts (e.g., nest destruction) or indirect impacts (e.g., noise, vibration, odors, movement of workers or equipment, etc.). If absence of nesting birds is verified, construction can proceed with submittal of the survey report to the Merced County Community and Economic Development Department. If nesting activity is detected, the following measures shall be implemented:

a. **Buffer Establishment.** If an active bird nest is observed during preconstruction surveys or during construction, a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors shall be implemented using high visibility markers or fencing. If an active tricolored blackbird nesting colony is found during preconstruction surveys, a 300-foot no-disturbance buffer shall be implemented. These buffers shall remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental car for survival..

b. **Variance of Buffer Distances.** Variance from the no-disturbance buffers described above may be allowable when there is a compelling biological or

ecological reason to do so, such as when the construction area would be concealed from a nest site by topography. Any variance from the no-disturbance buffers shall be advised and supported by a qualified biologist and CDFW shall be notified in advance of implementing a variance.

c. **Nest Monitoring.** If nest buffers are reduced, the biologist shall monitor any construction activities that take place within 250 feet of non-listed bird species nests, within 300 feet of an active tricolored blackbird nesting colony, and 500 feet of non-listed raptor nests. If nesting birds show any signs of disturbance, including changes in behavior, significantly reducing frequency of nests visits, or refusal to visit the nest, the biologist will stop work and increase the nest buffer. If appropriate on a case-by-case basis, as determined by the qualified biologist, nest monitoring may be reduced to weekly spot-check monitoring, at a minimum, if the biologist determines that the nesting birds have shown no signs of disturbance from construction activities and a continuation of the same types of construction activities are unlikely to disturb the nesting birds.

d. **Nest Removal.** Nests, eggs, or young of birds covered by the Migratory Bird Treaty Act and California Fish and Game Code shall not be moved or disturbed until a qualified biologist has determined that the nest has become inactive or young have fledged and become independent of the nest.

e. **Reporting.** A qualified biologist shall document all active nests and submit a letter report to Merced County documenting project compliance with the Migratory Bird Treaty Act, California Fish and Game Code, and applicable project mitigation measures.

MM BIO-2 **Burrowing Owl Preconstruction Surveys.** A qualified biologist shall conduct preconstruction surveys of all areas of potential habitat that will be permanently or temporarily impacted, plus a 150-meter (approximately 492 feet) buffer in areas subject to legal access, to locate active breeding or wintering burrowing owl burrows. The survey(s) shall occur no more than 14 days prior to ground-disturbing activities (e.g., vegetation clearance, grading). The survey methodology shall be consistent with the take avoidance survey methods outlined in the California Department of Fish and Wildlife *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Wildlife 2012). Because burrowing owl may re-colonize a site after periods of inactivity, time lapses of 7 days during the breeding season or 14 days during the non-breeding season between project activities shall trigger subsequent surveys, including, but not limited to, a final survey conducted within 24 hours prior to ground disturbance to identify any additional burrowing owl or burrows necessitating avoidance, minimization, or mitigation measures. The need for additional surveys will be at the final discretion of the biologist.

MM BIO-3 **Burrowing Owl Avoidance.** If burrowing owl(s) are detected on-site during preconstruction surveys or during construction, no ground-disturbing activities within a minimum 200-meter (approximately 656 feet) avoidance buffer shall occur around occupied burrows during the breeding season (February 1–August 31), unless authorized by the California Department of Fish and Wildlife. During the non-breeding season (September 1–January 31), no ground-disturbing activities within a minimum 50-meter (approximately 164 feet) avoidance buffer shall occur around occupied burrows, unless authorized by the California Department of Fish and Wildlife.

MM BIO-4 **Burrowing Owl Mitigation.** If occupied burrow avoidance is infeasible during the non-breeding season or during the breeding season where resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent survival, the applicant shall coordinate with the California Department of Fish and Wildlife to develop a Burrowing Owl Exclusion and Mitigation Plan. The plan shall differentiate strategies for active burrows found on the project site vs. active burrows found adjacent to the project site. For example, an Exclusion and Mitigation Plan strategy may include:

a. Passive exclusion of burrowing owl from burrows within the project site using one-way doors.

b. Excavation of potential burrowing owl burrows within the project site that are confirmed to be empty of burrowing owl adults and/or young.

c. Creation of artificial burrowing owl burrows within the project site to offset the loss of known occupied burrowing owl burrows.

d. Acquisition of burrowing owl conservation lands and/or bank credits.

MM BIO-5 **Swainson's Hawk Surveys.** To meet California Department of Fish and Wildlife recommendations for mitigation and protection of Swainson's hawk, surveys shall be conducted for a 0.5-mile radius around all project activities. Surveys shall be conducted by a qualified biologist and follow the *Recommended timing and methodology for Swainson's hawk nesting surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). At a minimum, a qualified biologist shall conduct 3 surveys during two of the three recommended survey periods (Survey Periods II, III and V) totaling a minimum of six surveys prior to project initiation as outlined in the Swainson's Hawk Technical Advisory Committee's (2000) recommended methodology. Surveys shall be completed in Survey Periods II (March 20–April 5), III (April 5–April 20), and V (June 10–July 30). **Surveys shall not be conducted in Period IV (April 21–June 10).** The survey periods are defined by the timing of migration, courtship, and nesting in a "typical" year for the majority of Swainson's hawk; however, the best times to survey will vary depending on seasonal factors. Known nest locations should be visited during surveys to verify nesting activity in the area. If Swainson's hawk absence is verified with 0.5 mile of the project site, project activities can proceed providing acceptance by the California Department of Fish and Wildlife of the survey results. Verification of acceptance of survey results by the California Department of Fish and Wildlife shall be submitted to Merced County prior to the start of construction.

MM BIO-6 If a Swainson's hawk nest is observed within 0.5 mile of the project site during the protocol surveys outlined in Mitigation Measure MM BIO-5 or during construction, the applicant shall coordinate with the California Department of Fish and Wildlife to determine if an Incidental Take Permit is required and implement measures to avoid take of Swainson's hawk. Such measures may include but may not be limited to:

a. Implementation of avoidance buffers;

b. When possible, seasonal restrictions of project activities during the nesting season; and

c. Acquisition of Swainson's hawk conservation lands and/or bank credits.

MM BIO-7 **San Joaquin Kit Fox Preconstruction Surveys.** A qualified biologist shall complete a preconstruction survey for San Joaquin kit fox no less than 14 days and no more than 30

days prior to the start of initial project activities to ensure San Joaquin kit fox is not present within all proposed work areas and a 200-foot buffer around work areas where feasible per U.S. Fish and Wildlife Service Standard Recommendations (2011). The biologist shall survey for sign of San Joaquin kit fox and known or potential San Joaquin kit fox dens. The results of the survey shall be submitted to Merced County within 5 days of the survey and prior to start of initial project activities. The submittal shall include the date the survey was conducted, survey method, and survey results, including a map of the location of any San Joaquin kit fox sign, and/or known or potential San Joaquin kit fox dens, if present.

a. If no San Joaquin kit fox sign, potential or known San Joaquin kit fox dens are identified, then the San Joaquin kit fox Standard Protection Avoidance and Protection Measure shall be implemented and project work may begin.

b. If the qualified biologist identifies potential San Joaquin kit fox den(s), the den(s) will be monitored for 3 consecutive nights with an infra-red camera, prior to any project activities, to determine if the den is being used by San Joaquin kit fox. If no San Joaquin kit fox activity is observed during the 3 consecutive nights of camera placement, then project work can begin with the Standard San Joaquin kit fox Avoidance and Protection Measures and the San Joaquin kit fox Protection Measures if San Joaquin kit fox are observed.

c. If a known den is identified within 200-feet of any proposed project work areas, no work may start in that area and Mitigation Measure MM BIO-8 shall be implemented.

If 30 days lapse between different phases of project activities (e.g., vegetation trimming and the start of grading), where no or minimal work activity occurs, the San Joaquin kit fox survey shall be updated.

MM BIO-8 **Impacts to San Joaquin Kit Fox Dens.** If the San Joaquin Kit Fox Preconstruction Survey results determine that known, active, or natal San Joaquin kit fox dens will be impacted, then the following mitigation measures shall be implemented:

a. A permanent minimum avoidance buffer using fencing or flagging shall be maintained as follows:

    1. At least 100 feet around den(s);
    2. At least 200 feet around natal dens (in which young are reared); and
    3. At least 500 feet around any natal dens with observed young (i.e., San Joaquin kit fox pups) (except for any portions of the buffer zone that are already fully developed).

b. Avoidance buffer zones shall be considered Environmentally Sensitive Areas, and no activities are allowed within a buffer except as follows:

    1. If the work within the buffer area will not result in the destruction of the den and the den will be conserved/retained.
    2. If the den is unoccupied (based on the required 4 consecutive days of monitoring), then the den can be covered in a secure manner to prevent access by San Joaquin kit fox while the work is being conducted. After the work is done, the den can be uncovered to allow use by San Joaquin kit fox.

3. If the den is occupied and the San Joaquin kit fox does not vacate the den, then a smaller buffer could be established, including a barricade to prevent the San Joaquin kit fox from exiting the den and entering the work site. A qualified biologist shall monitor the den while the work is being conducted.

c. The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife shall be notified immediately via telephone or e-mail if any San Joaquin kit fox active dens, natal dens, or occupied atypical dens are discovered within or immediately adjacent to any proposed development footprint. The Applicant shall bear the costs of implementing the San Joaquin kit fox den avoidance requirements. A reduced avoidance buffer may be authorized with regulatory agency approval.

    1. For active dens and potential dens that exhibit signs of San Joaquin kit fox use or characteristics suggestive of San Joaquin kit fox dens (including dens in natural substrate and in/under manmade structures) that cannot be avoided, and if, after 4 consecutive days of monitoring with tracking medium or infrared camera, a qualified biologist has determined that San Joaquin kit fox is not currently present, the den may be excavated. Natal dens shall not be excavated until the pups and adults have vacated and then only after consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. If the excavation process reveals evidence of current use by San Joaquin kit fox, then den excavation shall cease immediately and tracking or camera monitoring, as described above, shall be conducted/resumed. Excavation of the den may be completed when, in the judgment of a qualified biologist, the San Joaquin kit fox has escaped from the partially excavated den. San Joaquin kit fox dens shall be carefully excavated until it is certain no San Joaquin kit fox individuals are inside. Dens shall be fully excavated, filled with dirt, and compacted to ensure that San Joaquin kit fox cannot reenter or use the den during Covered Activities. If an individual San Joaquin kit fox does not vacate a den within the proposed construction footprint within a reasonable timeframe, the Applicant shall coordinate with U.S. Fish and Wildlife Service and California Department of Fish and Wildlife and obtain written/email guidance from both agencies prior to proceeding with den excavation. The Applicant shall bear the costs of implementing the San Joaquin kit fox den excavation requirements.

d. If active San Joaquin kit fox dens are detected on-site, the Applicant shall coordinate with the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife to obtain all necessary regulatory authorizations to facilitate federal Endangered Species Act and/or California Endangered Species Act compliance, if required. This coordination may include but may not be limited to acquisition of a federal and state incidental take permit for San Joaquin kit fox.

MM BIO-9 **San Joaquin Kit Fox Avoidance and Protection Measures.** The following mitigation measures shall be implemented during all demolition, site disturbance, and construction activities, as detailed in the *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (U.S. Fish and Wildlife Service 2011):

a. Project-related vehicles should observe a daytime speed limit of 20 miles per hour throughout the site in all project areas, except on county roads and federal and state highways; this is particularly important at night when San Joaquin kit fox are most active. Nighttime construction should be minimized to the extent possible. However, if it does occur, then the speed limit should be reduced to 10 miles per hour. Off-road traffic outside of designated project areas should be prohibited.

b. To prevent inadvertent entrapment of San Joaquin kit fox or other wildlife during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped wildlife. If at any time a trapped or injured San Joaquin kit fox is discovered, the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife shall be contacted.

c. San Joaquin kit fox are attracted to den-like structures, such as pipes, and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for San Joaquin kit fox before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If San Joaquin kit fox are discovered inside a pipe, that section of pipe should not be moved until U.S. Fish and Wildlife Service has been consulted. If necessary, and under the direct supervision of the biological monitor, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

d. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.

e. No firearms shall be allowed on the project site.

f. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of San Joaquin kit fox, or destruction of dens.

g. Use of rodenticides and herbicides in project areas shallbe restricted. This is necessary to prevent primary or secondary poisoning of San Joaquin kit fox and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other federal and state legislation, as well as additional project-related restrictions deemed necessary by the U.S. Fish and Wildlife Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to San Joaquin kit fox.

h. A representative shall be appointed by the Applicant who will be the contact source for any employee or contractor who might inadvertently kill or injure a San Joaquin kit fox or who finds a dead, injured, or entrapped San Joaquin kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the U.S. Fish and Wildlife Service.

i. An employee education program should be conducted for any project that has anticipated impacts to San Joaquin kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in San Joaquin kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: a description of the San Joaquin kit fox and its habitat needs, a report of the occurrence of San Joaquin kit fox in the project area, an explanation of the status of the species and its protection under the federal Endangered Species Act and California Endangered Species Act, and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.

j. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc., should be recontoured, if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the U.S. Fish and Wildlife Service, the California Department of Fish and Wildlife, and revegetation experts.

k. In the case of trapped wildlife, escape ramps or structures should be installed immediately to allow the wildlife to escape, or the U.S. Fish and Wildlife Service should be contacted for guidance.

l. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the California Department of Fish and Wildlife immediately in the case of a dead, injured, or entrapped San Joaquin kit fox. The U.S. Fish and Wildlife Service shall be contacted at (916) 414-6620 or (916) 414-6600, and the California Department of Fish and Wildlife contact for immediate assistance is State Dispatch at (916) 445-0045.

m. The Sacramento U.S. Fish and Wildlife Service and California Department of Fish and Wildlife shall be notified in writing within 3 working days of the accidental death or injury to an San Joaquin kit fox during project-related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured wildlife and any other pertinent information.

n. New sightings of San Joaquin kit fox shall be reported to the California Natural Diversity Database. A copy of the reporting form and a topographic map clearly marked with the location of where the San Joaquin kit fox was observed should also be provided to the U.S. Fish and Wildlife Service.

V. Cultural Resources

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☐	☐	☐	☒
(b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☒	☐	☐
(c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

Setting

PRC Section 5024.1 requires that any properties that can be expected to be directly or indirectly affected by a proposed project be evaluated for California Register of Historical Resources (CRHR) eligibility. The purpose of the CRHR is to maintain listings of the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from material impairment and substantial adverse change.

As defined by CEQA, a historical resource includes:

1. A resource listed in or determined to be eligible for listing in the CRHR.
2. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant. The architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural records of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence.

Resources are evaluated for eligibility for the CRHR under the following four criteria:

- **Criterion 1:** The resource is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- **Criterion 2:** The resource is associated with the lives of persons important in our past;
- **Criterion 3:** The resource embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; and
- **Criterion 4:** The resource has yielded, or may be likely to yield, information important in prehistory or history.

A Cultural Resources Survey Report (CRSR) was prepared for the proposed project to determine the presence and likelihood of presence of cultural resources within the project area (SWCA 2023). The CRSR includes the results and findings of background review and a pedestrian survey of the project area. A records search was conducted at the Central California Information Center (CCIC) located at California State University, Stanislaus to identify any previously recorded cultural resources within the project area. The records search was negative for previously recorded resources within the project site. In addition,

SWCA contacted the California Native American Heritage Commission (NAHC) to request a search of their Sacred Lands File. The results of the Sacred Lands File search were negative. A pedestrian field survey was conducted within the project area on January 19, 2023, during which, historic trash and foundational remnants associated with the vacant residence, which was originally built in 1935, were encountered within the project site (SWCA 2022).

Environmental Evaluation

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?

There is a vacant residence located on the eastern portion of the project site that was originally built in 1935 that would be demolished as part of the proposed project. However, this vacant residence lacks both historical significance and integrity, and does not meet the criteria for listing in the CRHR (SWCA 2023). The residence is not designated as a historical resource under any local ordinance, and the preponderance of evidence demonstrates that the resource is not historically or culturally significant; therefore, this resource does not constitute a historical resource for the purposes of CEQA. Because there are no historical resources located within the project area, implementation of the proposed project would not result in an adverse change in the significance of a historical resource, and *no impacts* would occur.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Construction activities would result in approximately 0.05 acre of ground disturbance, including 150 cubic yards of cut and fill activity, and insertion of posts up to 10 feet in depth. Based on a records search conducted at the CCIC and of the NAHC Sacred Lands File, there are no previously recorded archaeological resources within the project area. During the pedestrian field survey, historic trash and foundational remnants were encountered within the project area. While these resources would traditionally be classified as cultural resources, they are directly associated with the vacant residence on-site and as described under threshold a, above, the residence does not meet the criteria for listing in the CRHR and does not constitute a historic resource. Therefore, the historic trash and foundational remnants on-site are not considered archaeological resources of value. No other cultural archaeological resources were identified within the project area (SWCA 2023). Mitigation Measure MM CR-1 has been included in the unlikely event that previously unidentified cultural resources are uncovered during proposed ground-disturbing activities. Based on implementation of Mitigation Measure MM CR-1, the project would not result in adverse impacts to known or unknown cultural resources; therefore, impacts would be *less than significant with mitigation*.

c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

There are no known human remains or cemeteries located within or in the immediate vicinity of the project site, and the project area is considered to have low sensitivity for the presence of unidentified human resources (SWCA 2023). The project would be required to comply with California Health and Safety Code Section 7050.5, which outlines the protocol for unanticipated discovery of human remains. Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. The County Coroner must be notified of the find immediately. If the human remains are determined to be prehistoric, the coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Based

on required compliance with California Health and Safety Code Section 7050.5, impacts related to disturbance of human remains would be *less than significant.*

Conclusion

The on-site vacant residence does not constitute a historical resource for the purposes of CEQA; therefore, the proposed project would not adversely affect any historical resources. With implementation of Mitigation Measure MM CR-1 and required compliance with California Health and Safety Code 7050.5, the proposed project would not adversely affect archaeological resources or human remains, and impacts related to cultural resources would be less than significant.

Mitigation Measures

MM CR-1 In the event that cultural resources are encountered during project activities, all ground-disturbing activities within a 25-foot radius of the find shall cease and Merced County shall be notified immediately. Work shall not continue until a qualified archaeologist assesses the find and determines the need for further study. If the find includes Native American-affiliated materials, a local Native American tribal representative will be contacted to work in conjunction with the approved archaeologist to determine the need for further study. A standard inadvertent discovery clause shall be included in every grading and construction contract to inform contractors of this requirement.

VI. Energy

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
(b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Setting

The project site is located in the PG&E service area. The 2021 PG&E electric power mix consisted of 50% renewable energy sources and 43% GHG-free energy sources (PG&E 2021).

Vehicle Fuel Economy Standards

In October 2012, the USEPA and National Highway Traffic Safety Administration (NHTSA), on behalf of the U.S. Department of Transportation (USDOT), issued final rules to further reduce GHG emissions and improve corporate average fuel economy (I) standards for light-duty vehicles for model years 2017 and beyond. The NHTSA's I standards have been enacted under the Energy Policy and Conservation Act since 1978. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program would increase fuel economy to the equivalent of 54.5 miles per gallon (mpg),

limiting vehicle emissions to 163 grams of carbon dioxide (CO_2) per mile for the fleet of cars and light-duty trucks by the model year 2025.

In January 2017, USEPA Administrator Gina McCarthy signed a Final Determination to maintain the current GHG emissions standards for the model years 2022 through 2025 vehicles. However, on March 15, 2017, USEPA Administrator Scott Pruitt and USDOT Secretary Elaine Chao announced that the USEPA intends to reconsider the Final Determination. On April 2, 2018, USEPA Administrator Pruitt officially withdrew the January 2017 Final Determination, citing information that suggests that these current standards may be too stringent due to changes in key assumptions since the January 2017 Determination. According to the USEPA, these key assumptions include gasoline prices and overly optimistic consumer acceptance of advanced technology vehicles. The April 2nd notice is not USEPA's final agency action, and the USEPA intends to initiate rulemaking to adopt new standards. Until that rulemaking has been completed, the current standards remain in effect.

As part of California's overall approach to reducing pollution from all vehicles, the CARB has established standards for clean gasoline and diesel fuels and fuel economies of new vehicles. The CARB has also put in place innovative programs to drive the development of low-carbon, renewable, and alternative fuels, such as their Low Carbon Fuel Standard Program pursuant to California Assembly Bill (AB) 32 and the Governor's Executive Order S-01-07.

In January 2012, the CARB approved the Advanced Clean Cars Program, which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15% of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34% fewer global warming gases and 75% fewer smog-forming emissions than the statewide fleet in 2016 (CARB 2022).

All self-propelled off-road diesel vehicles 25 horsepower (hp) or greater used in California and most two-engine vehicles (except on-road two-engine sweepers) are subject to the CARB's Regulation for In-Use Off-Road Diesel Fueled Fleets (Off-Road regulation). This includes vehicles that are rented or leased (rental or leased fleets). The overall purpose of the Off-Road regulation is to reduce emissions of NO_X and particulate matter from off-road diesel vehicles operating within California through the implementation of standards, including, but not limited to, limits on idling, reporting and labeling of off-road vehicles, limitations on use of old engines, and performance requirements.

The County Natural Resources Element provides the following goal and policies related to the energy resources that would be applicable to the proposed project:

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, wind).

Environmental Evaluation

a) Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

During construction, fossil fuels, electricity, and natural gas would be used by construction vehicles and equipment. The energy consumed during construction would be temporary in nature and typical of other similar construction activities in the county. Federal and state regulations in place require the use of fuel-efficient equipment and vehicles and require wasteful activities, such as diesel idling, to be limited. Construction contractors, in an effort to ensure cost efficiency, would not be expected to engage in wasteful or unnecessary energy and fuel practices. Electricity use for the project would be limited to outdoor lighting installed for illumination purposes only. Electricity would be provided by PG&E, which consists of 50% renewable energy sources and 43% GHG-free energy sources (PG&E 2021). By using electricity from PG&E, the project would reduce the long-term use of non-renewable energy resources. Operation of the project would result in approximately four vehicle trips per year for site inspection and maintenance activities and delivery trips for as-needed equipment replacement once every 10 years; therefore, long-term fossil fuel use would be negligible.

Following construction, the project would operate a 4.4 megawatt alternating current (MWac) PV solar power generation facility that would deliver power to PG&E's existing distribution network. As such, implementation of the proposed project would reduce the consumption of non-renewable energy resources by delivering additional solar energy to PG&E's existing distribution network. Based on the limited amount of electricity use required for the project and generation of solar energy, the project would not cause a substantial increase in energy use; therefore, operational impacts would be *less than significant*.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

As previously evaluated, the energy consumed during construction and operation of the project would not represent a significant or wasteful demand on available resources, which is consistent with applicable state and local energy efficiency objectives. The County Natural Resources Element identifies goals and policies to increase the use of renewable and clean energy resources in the county. The project would result in construction and operation of an 11.3-acre PV solar power generation facility that would deliver solar energy to PG&E's existing distribution network, ultimately reducing the consumption of non-renewable energy resources; therefore, the proposed project would be consistent with the goals and policies of the County General Plan related to the use of renewable and clean energy resources in the county. Although not required to reduce construction-related energy consumption, Mitigation Measure MM AQ-3 requires the use of clean off-road construction equipment, including the latest tier equipment, where feasible during project construction, which would be consistent with County General Plan goals related to the use of alternative energy sources. The project would be consistent with renewable energy goals included in the County Natural Resources Element; therefore, impacts would be *less than significant*.

Conclusion

The project would not result in excessive energy use during construction or operation and would be consistent with applicable energy efficiency plans; therefore, impacts related to energy would be less than significant, and mitigation is not necessary.

Mitigation Measures

Mitigation is not necessary.

VII. Geology and Soils

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
(ii) Strong seismic ground shaking?	☐	☐	☐	☒
(iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
(iv) Landslides?	☐	☐	☐	☒
(b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
(c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
(d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
(e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
(f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Setting

Ground shaking refers to the motion that occurs in response to regional and local earthquakes. Seismic ground shaking is influenced by the proximity of the site to an earthquake fault, the intensity of the seismic event, and the underlying soil composition. Ground shaking can endanger life and safety due to

damage or collapse of structures or lifeline facilities. Liquefaction is the sudden loss of soil strength due to a rapid increase in soil pore water pressure resulting from ground shaking during an earthquake. Landslides and slope instability can occur as a result of wet weather, weak soils, improper grading, improper drainage, steep slopes, adverse geologic structure, earthquakes, or a combination of these factors.

According to the *Merced County Multi-Jurisdictional Hazard Mitigation Plan*, the nearest faults of major significance to the project area are the San Andreas Fault, approximately 15 miles west; Hayward and Calaveras Faults, approximately 50 miles northwest; White Wolf, Garlock, and Sierra Nevada Faults to the south; and Bear Mountain Fault zone approximately 5 miles east of the respective county lines (Merced County 2021). According to the CDOC Fault Activity map of California, there are no active faults within 40 miles of the project site and the nearest fault to the project site is the late quaternary San Joaquin Fault, located approximately 15 miles west of the project site (CDOC 2015b). According to the *Final Program Environmental Impact Report for the 2030 Merced County General Plan* (Final PEIR), overall seismic-related risk, including the risk of liquefaction and landslide, in the county is low (Merced County 2013b).

Highly erodible soils are those that are easily carried by water and, to a lesser extent, by wind. Surface erosion is more commonly visible, but subsurface erosion can lead to damage to pipes, roads, foundations, and other structural elements. Expansive soils are largely comprised of clays, which expand in volume when water is absorbed and shrink as the soil dries. Expansion is measured by shrink-swell potential, which is the volume change in soil with an increase in moisture. If the shrink-swell potential is rated moderate to high, then damage to buildings, roads, structural foundations, and pipes can occur. In the northern portion of the county, there are some areas of expansive clay soil that require special construction standards for foundations and infrastructure. Expansive clay problems can be surmounted by appropriate engineering design and construction techniques.

The project site is underlain by Pleistocene- to-Holocene-age marine and nonmarine (continental) sedimentary rock deposits (Q), which has a low paleontological sensitivity because it is typically too young to yield scientifically significant paleontological specimens (CDOC 2015a).

Environmental Evaluation

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

a-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.

According to the CDOC Fault Activity Map of California, there are no active faults within 40 miles of the project site (CDOC 2015b). Because the project site is not underlain by an Alquist-Priolo or other active fault zone, rupture of a known Alquist-Priolo fault would not occur within the project site; therefore, *no impacts* would occur.

a-ii) Strong seismic ground shaking?

Overall seismic-related risk, including the risk of seismic ground shaking, in the county is low (Merced County 2013b). In addition, the nearest fault to the project site is the late quaternary San Joaquin Fault, located approximately 15 miles west of the project site (CDOC 2015b). The project does not include the construction of any occupiable buildings or structures that would be subject to seismic design standards

included in the most recent California Building Code (CBC) or that could result in the risk of loss, injury, or death as a result of seismic-induced hazards, including seismic ground shaking; therefore, *no impacts* would occur.

a-iii) Seismic-related ground failure, including liquefaction?

According to the Final PEIR, the risk of liquefaction in the county is low (Merced County 2013b). In addition, the project does not include the construction of any occupiable buildings or structures that would be subject to seismic design standards included in the most recent CBC or that could result in the risk of loss, injury, or death as a result of seismic-induced hazards, including liquefaction; therefore, *no impacts* would occur.

a-iv) Landslides?

According to the Final PEIR, the risk of landslide in the county is low (Merced County 2013b). The project site and surrounding area consists of relatively flat topography, which further reduces the risk of landslide at the project site. The project does not include the construction of any occupiable buildings or structures that would be subject to design standards included in the most recent CBC or that could result in the risk of loss, injury, or death as a result of seismic-induced hazards, including landslide; therefore, *no impacts* would occur.

b) Result in substantial soil erosion or the loss of topsoil?

Construction activities would result in approximately 0.05 acre of ground disturbance, including 150 cubic yards of cut and fill activity. Proposed ground-disturbing activities would have the potential to increase erosion or loss of topsoil at the project site. The project would disturb less than 1 acre of soils and would not be required to comply with the County Stormwater Ordinance (County Code Section 9.53.010), which requires preparation and implementation of an Erosion Control Plan (ECP). The project has been designed to minimize ground disturbance at the project site, such as conforming to the existing topography of the project site, maintaining existing drainage patterns at the project site, and attaching cables to the tracking system rather than digging trenches, which would reduce the potential for the project to result in substantial erosion or loss of topsoil. In addition, a 150-foot buffer would be established around the two unpaved irrigation ditches on the project site to further protect from erosion during construction activities. Operation of the project would not result in long-term activities that could increase erosion or loss of topsoil at the project site. The project would operate for 35 years and would be decommissioned following operation of the proposed project. Following decommissioning, the site would be returned to preconstruction conditions; therefore, long-term erosion potential would be consistent with existing conditions. Based on the limited amount of proposed ground disturbance, implementation of the proposed project would not result in substantial soil erosion or the loss of topsoil; therefore, impacts would be *less than significant*.

c) Would the project 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?

According to the Final PEIR, there is a low risk of landslide and liquefaction within the county (Merced County 2013b). However, the project site is located in an area with known land subsidence (USGS 2022a). The project does not include the construction of any occupiable buildings or structures that would be subject to design standards included in the most recent CBC or that could increase risk associated with development on unstable soils; therefore, *no impacts* would occur.

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Expansive soils are typically comprised of clay. Soils at the project site consist of clay, clay loam, sandy loam, and stratified sand to silt loam; therefore, there is risk of soil expansion to occur at the project site (NRCS 2022). However, the project does not include the construction of any occupiable structures that could result in risk to life or property. Based on existing site conditions, the project would not result in risk to life or property as a result of development on expansive soils; therefore, *no impacts* would occur.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

The project includes demolition of the existing on-site septic system located on the far east side of the property. However, the project does not include the installation of septic tanks or alternative wastewater disposal systems; therefore, *no impacts* would occur.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The project site is underlain by Quaternary marine and nonmarine (continental) sedimentary rock deposits (Q), which have a low paleontological sensitivity because they are typically too young to yield scientifically significant paleontological specimens (CDOC 2015a). Construction activities would result in approximately 0.05 acre of ground disturbance, including 150 cubic yards of cut and fill activity. The tracking system would be installed on approximately 456 eight-inch by 13-inch posts, 68 eight-inch by 15-inch posts, and 8 eight-inch by 21-inch posts, all of which would be driven directly into the ground at a depth of approximately 6 to 10 feet. Based on the low paleontological sensitivity of the underlying geologic unit and the limited area of disturbance associated with installation of the PV solar panels, the proposed project would not adversely affect paleontological resources; therefore, impacts would be *less than significant*.

Conclusion

The project does not include the construction of any occupiable buildings or structures that would be subject to design standards included in the most recent CBC or that could result in the risk of loss, injury, or death as a result of ground-failure events or seismic-induced hazards, including ground shaking, liquefaction, or landslide. Based on the limited amount of proposed ground disturbance, the proposed project would not result in substantial soil erosion or the loss of topsoil. The project does not include the installation of septic tanks or alternative wastewater disposal systems. The project would not adversely affect paleontological resources. Therefore, impacts related to geology and soils would be less than significant, and mitigation is not necessary.

Mitigation Measures

Mitigation is not necessary.

VIII. Greenhouse Gas Emissions

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
(b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Setting

GHGs are any gases that absorb infrared radiation in the atmosphere and are different from the criteria pollutants discussed in Section III, *Air Quality*. The primary GHGs that are emitted into the atmosphere as a result of human activities are CO_2, methane (CH_4), nitrous oxide (N_2O), and fluorinated gases.

California Global Warming Solutions Act

Under the California Global Warming Solutions Act, also known as AB 32, the CARB established statewide GHG emissions cap for 2020, adopted mandatory reporting cards for significant sources of GHG, and adopted a comprehensive plan, known as the Climate Change Scoping Plan, identifying how emission reductions would be achieved from significant GHG sources.

In 2016 Senate Bill (SB) 32 was signed into law, amending the California Global Warming Solutions Act. SB 32, and accompanying Executive Order B-30-15, which requires CARB to ensure that statewide GHG emissions are reduced to 40% below the 1990 level by 2030. The CARB updated its Climate Change Scoping Plan in December 2017 to express the 2030 statewide target in terms of million metric tons of CO_2 equivalent ($MMTCO_2e$). Based on the emissions reductions directed by SB 32, the annual 2030 statewide target emissions level for California is 260 $MMTCO_2e$.

Sustainable Communities Strategy and Climate Protection Act

The Sustainable Communities Strategy and Climate Protection Act (SB 375) was signed into law in September 2008. SB 375 builds upon AB 32 by requiring CARB to develop regional GHG reduction targets for automobile and light-duty truck sectors for 2020 and 2035, as compared to 2005 emissions levels. Regional metropolitan planning organizations (MPOs) will be responsible for preparing a Sustainable Communities Strategy (SCS) with their Regional Transportation Plans (RTPs).

Merced County Association of Governments 2022 Regional Transportation Plan/ Sustainable Communities Strategy

The Merced County Association of Governments (MCAG) *2022 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS) includes a long-range plan for transportation and mixed-use planning in the county and identifies goals and objectives to reduce transportation-related GHG emissions, including the creation of bicycle and pedestrian facilities, congestion relief, and mixed-use design (MCAG 2022).

San Joaquin Valley Climate Change Action Plan

The SJVAPCD released the *San Joaquin Valley Climate Change Action Plan* in December 2009. The Climate Change Action Plan established goals and policies to address reductions in GHGs and improvement to regional air quality. The plan also includes Best Performance Standards (BPSs), which are mitigation measures intended to achieve GHG reductions. BPSs include building design elements that reduce energy consumption, project designs that promote pedestrian access, and land use planning decisions that reduce VMT.

2030 Merced County General Plan

The *2030 Merced County General Plan Air Quality Element* provides the following goals and policy related to the reduction of air pollutants and GHG emissions that would be applicable to the proposed project:

Goal AQ-1: Reduce air pollutants and greenhouse gas emissions and anticipate adaptation due to future consequences of global and local climate change.

Goal AQ-4: Reduce traffic congestion and vehicle trips through more efficient infrastructure and support for trip reduction programs.

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.

Environmental Evaluation

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

During construction, fossil fuels, electricity, and natural gas would be used by construction vehicles and equipment. Federal and state regulations in place require fuel-efficient equipment and vehicles and prohibit wasteful activities, such as diesel idling. Construction contractors, in an effort to ensure cost efficiency, would not be expected to engage in wasteful or unnecessary energy and fuel practices. Although not required to reduce construction-related GHG emissions, Mitigation Measure MM AQ-3 requires the use of clean off-road construction equipment, including the latest tier equipment, where feasible during project construction, which would further reduce GHG emissions during construction. Operation of the project has the potential to generate GHG emissions from electricity and fossil fuel use. Electricity use for the project would be limited to the installation of outdoor lighting for illumination purposes, which would be provided by PG&E. The PG&E power mix consists of 50% renewable energy sources and 43% GHG-free energy sources (PG&E 2021). By using electricity from PG&E, the project would reduce the long-term use of non-renewable energy resources and associated GHG emissions. Operation of the project would result in approximately four vehicle trips per year for site inspection and maintenance activities and delivery trips for as-needed equipment replacement once every 10 years; therefore, long-term fossil fuel use would be negligible. Following construction, the project would operate a 4.4 MWac PV solar power generation facility that would deliver solar energy to PG&E's existing distribution network. As such, implementation of the proposed project would reduce the consumption of non-renewable energy resources by delivering additional solar energy to PG&E's existing distribution network. Based on the limited amount of electricity use required for the project and generation of solar energy, the project would not generate a substantial amount of GHG emissions; therefore, impacts would be *less than significant*.

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The project is within the jurisdiction of the SJVAPCD and would be subject to the Climate Change Action Plan, which established BPSs to reduce VMT. Additionally, the RTP/SCS identifies goals and objectives to reduce transportation-related GHG emissions, including the creation of bicycle and pedestrian facilities, congestion relief, and mixed-use design (MCAG 2022). The project does not include the establishment of new residential, commercial, or other land uses that would be applicable to mixed-use planning identified in the RTP/SCS. Operation of the project would result in approximately four vehicle trips per year for site inspection and maintenance activities and delivery trips for as-needed equipment replacement once every 10 years; therefore, the project would not significantly increase VMT or associated vehicle emissions within the region, which would be consistent with the SJVAPCD Climate Change Action Plan and RTP/SCS; therefore, impacts would be *less than significant*.

Conclusion

The project would be consistent with the goals of the SJVAPCD Climate Change Action Plan and RTP/SCS and would not generate a substantial amount of short- or long-term GHG emissions; therefore, impacts related to GHG emissions would be less than significant, and mitigation is not necessary.

Mitigation Measures

Mitigation is not necessary.

IX. Hazards and Hazardous Materials

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
(b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
(c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
(d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
(e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒

	Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
(g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Setting

The Hazardous Waste and Substances Site (Cortese) List is a planning tool used by the state, local agencies, and developers to comply with CEQA requirements related to the disclosure of information about the location of hazardous materials release sites. California Government Code Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to develop an updated Cortese List at least annually. Various state and local government agencies are required to track and document hazardous material release information for the Cortese List. The California Department of Toxic Substance Control (DTSC) EnviroStor database tracks DTSC cleanup, permitting, enforcement, and investigation efforts at hazardous waste facilities and sites with known contamination, such as federal superfund, state response, voluntary cleanup, school cleanup, school investigation, and military evaluation sites (DTSC 2022). The State Water Resources Control Board (SWRCB) GeoTracker database contains records for sites that impact, or have the potential to impact, water in California, such as Leaking Underground Storage Tank (LUST), Department of Defense, and Cleanup Program Sites (SWRCB 2022). The remaining data regarding facilities or sites identified as meeting the "Cortese List" requirements can be located on the CalEPA website.

Based on a query of the DTSC EnviroStor and SWRCB GeoTracker databases, there are no hazardous materials sites located within or adjacent to the project site (DTSC 2022; SWRCB 2022). The nearest mapped hazardous materials sites are two closed LUST sites located approximately 0.6 mile southeast of the project site (SWRCB 2022).

Environmental Evaluation

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

The proposed project would require limited quantities of hazardous substances, including gasoline, diesel fuel, hydraulic fluid, solvents, oils, paints, etc. during construction, which has the potential to result in an accidental spill or release. Construction contractors would be required to comply with applicable federal and state environmental and workplace safety laws for the handling, transport, and storage of hazardous materials, including 22 CCR Division 4.5.

Operation of the project would include approximately four vehicle trips per year for site inspection and maintenance activities and one delivery trip every 10 years for as-needed equipment replacement; therefore, the solar panels would be properly maintained throughout the 35-year lifespan, which would reduce the potential for long-term risk associated with hazards at the project-site. Further, operational maintenance and delivery trips and equipment replacement activities would also be conducted in accordance with relevant federal and state environmental and workplace safety laws for the handling, transport, and storage of hazardous materials. The electrical equipment used for the solar PV generation facility (i.e., inverters, transformers, AC switchgear, and PV system disconnect) on an approximately

600-square-foot concrete equipment pad and stored within secure, fully enclosed containers anchored to the concrete pad. The operation and condition of the batteries and other electrical equipment would be regularly inspected by employees on a quarterly basis. At the end of the project life, all project materials would be removed from the site and recycled or disposed of in accordance with applicable State and local regulations regarding disposal of electrical equipment in place at that time. Therefore, impacts associated with the routine transport, use, or disposal of hazardous materials would be *less than significant.*

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

As previously discussed, temporary construction activities would include the use of construction equipment, vehicles, and commonly used hazardous substances, including, but not limited to, paint, solvents, oils, fuel, and gasoline. Commonly used hazardous substances within the project site would be transported, stored, and used according to regulatory requirements and existing procedures for the handling of hazardous materials.

The project includes improvements to the existing unpaved driveway off Elgin Avenue and may require the installation of utility poles along Elgin Avenue. However, the project would not require ground-disturbing activities within this roadway; therefore, the project is not expected to disturb aerially deposited lead (ADL) during proposed improvements. The project site is not located in an area with the potential for NOA to occur; however, the project would require the demolition of existing on-site structures that could release ACM or lead-based paint if present within the building materials (CGS 2011). Mitigation Measure MM AQ-4 included in Section III, *Air Quality*, requires the testing of building materials prior to demolition and identifies the proper protocol to be implemented in the event ACM or lead-based paint is present within building materials of the existing structures.

Operation of the project would include approximately four vehicle trips per year for site inspection and maintenance activities and delivery trips for as-needed equipment replacement once every 10 years, which would be conducted in accordance with relevant federal and state environmental and workplace safety laws for the handling, transport, and storage of hazardous materials. In addition, future decommissioning would be conducted in accordance with applicable State and local regulations regarding disposal of electrical equipment in place at that time. Based on required compliance with CCR Title 22, the project would not create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment; therefore, impacts would be *less than significant with mitigation.*

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

The nearest school is Dos Palos Elementary School, approximately 1.2 miles southeast of the project site. Therefore, the proposed project would not emit hazardous emissions or handle acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school, and *no impacts* would occur.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Based on a query of the DTSC EnviroStor and SWRCB GeoTracker databases, there are no hazardous materials sites located within or adjacent to the project site (DTSC 2022; SWRCB 2022). The project site

is not located on or adjacent to a site that is on a list of hazardous materials sites pursuant to California Government Code Section 65962.5; therefore, the project would not create a significant hazard to the public or the environment related to disturbance of a known hazardous materials site, and *no impacts* would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The nearest airport to the project site is Dos Palos Airport located approximately 2.5 miles southeast. The project site is not located within an airport land use plan or within 2 miles of an airport; therefore, the proposed project would not result in a safety hazard or excessive noise for people residing or working in the project area, and *no impacts* would occur.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The project site would be accessed via an existing 15-foot-wide driveway that would be improved to meet applicable County and California Department of Forestry and Fire Protection (CAL FIRE) standards (e.g., improved to add aggregate base, meet minimum width requirements, etc.). The access road would be required to comply with requirements included in the most recent California Fire Code (CFC) and County Department of Public Works Improvement Standards and Specifications for access roads to ensure adequate emergency access to and from the project site. The project would be limited to periodic maintenance and inspection activities up to four times per year and would not generate a substantial number of people or vehicle trips within the area that could otherwise impede emergency response or evacuation efforts within the project area. Based on required compliance with the most recent CFC and County Public Works requirements, the project would not substantially impair an adopted emergency response plan or emergency evacuation plan; therefore, impacts would be *less than significant*.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

The project site is located approximately 0.5 mile north of the city of Dos Palos and is characterized by relatively flat topography with a low potential for wildfire occurrence (Merced County 2021). The project includes the construction of a 11.3-acre PV solar generation facility on a previously undeveloped portion of the project site. The proposed PV solar generation facility would be required to comply with CFC Section 1204.4, which identifies requirements for solar panel installation to reduce the potential for wildfire ignition at the project site. In addition, vegetation management would occur during periodic maintenance and inspection activities at the project site, which would further reduce the potential for wildfire ignition at the project site. The proposed project would be sited in an area with low risk of wildfire and would be required to comply with requirements of the most recent CFC; therefore, implementation of the proposed project would not increase risk of wildfire at the project site, and impacts would be *less than significant.*

Conclusion

Based on required compliance with the CCR, the project would not result in significant hazards related to the routine transport, use, or disposal of hazardous materials. Mitigation Measure MM AQ-4 has been identified to avoid disturbance of ACM or lead-based paint during proposed demolition activities. The project is not located within 0.25 mile of a school, within 2 miles of an airport, or within or adjacent to a previously recorded hazardous materials site. The project would not impair implementation of an adopted

emergency response plan or emergency evacuation plan and would not expose people or structures to a significant risk involving wildfires. Therefore, impacts related to hazards and hazardous materials would be less than significant, and mitigation is not necessary.

Mitigation Measures

Implement Mitigation Measure MM AQ-4.

X. Hydrology and Water Quality

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
(b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
(c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) Result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
(iv) Impede or redirect flood flows?	☐	☐	☒	☐
(d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
(e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Setting

The project site is located in the Merced Subbasin of the San Joaquin Valley Groundwater Basin. The Merced Subbasin encompasses approximately 801 square miles of Merced County and key municipalities within the subbasin include Merced County and the cities of Merced, Livingston, and Atwater. The subbasin consists of lands south of the Merced River, between the San Joaquin River to the west and the crystalline basement rock of the Sierra Nevada foothills to the east. The southern subbasin boundary extends west along the Chowchilla River (Merced–Madera County boundary) and along the northern edge of the sphere of influence boundary of Chowchilla Water District. Geologic units in the Merced Subbasin consist of consolidated rocks and unconsolidated deposits. The Merced Subbasin is heavily

reliant on groundwater, and users recognize the subbasin has been in overdraft for a long period of time. The subbasin is under the jurisdiction of three Groundwater Sustainability Agencies (GSAs), including the Merced Irrigation-Urban Groundwater Sustainability Agency (MIUGSA), the Merced Subbasin Groundwater Sustainability Agency (MSGSA), and the Turner Island Water District Groundwater Sustainability Agency #1 (TIWD GSA-1). The *Merced Groundwater Subbasin Groundwater Sustainability Plan* (GSP) identifies sustainable management goals and practices to achieve sustainable groundwater management on a long-term average basis by increasing recharge and/or reducing groundwater pumping, while avoiding undesirable results (Woodard & Curran 2022).

Two irrigation ditches with well-defined banks are located on-site to the north and west of the proposed solar facility development area.

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 06047C0875G (effective date 12/2/2008), the project site is within Zone X, an area of minimal flood hazard (FEMA 2022).

Environmental Evaluation

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Two irrigation ditches with well-defined banks are located on-site to the north and west of the proposed solar facility development area. The project would not result in direct disturbance to either of the irrigation ditches. However, the project would require ground-disturbing activities and equipment and vehicle use during project construction, which has the potential to result in erosion or other pollutants that could run off from the site to surrounding areas. Construction of the proposed project would result in approximately 0.05 acre of site disturbance, including approximately 150 cubic yards of cut and fill. The project would disturb less than 1 acre of soils and would not be required to comply with the County Stormwater Ordinance (County Code Section 9.53.010), which requires implementation of best management practices (BMPs) during project construction, preparation of an ECP, and implementation of post-construction stormwater control measures. The project has been designed to minimize ground disturbance and impervious surfaces at the project site, such as conforming to the existing topography of the project site, maintaining existing drainage patterns at the project site, and attaching cables to the tracking system rather than digging trenches, which would reduce the potential for the project to result in substantial erosion at the project site. Further, a 150-foot buffer would be established around the two unpaved irrigation ditches on the project site to further protect from erosion during construction activities. In addition, construction contractors would be required to comply with applicable federal and state environmental and workplace safety laws for the handling, transport, and storage of hazardous materials, which would reduce the potential for accidental spill of hazardous substances to occur that could runoff into surrounding areas. Based on the limited amount of proposed ground disturbance and required compliance with federal and state environmental and workplace safety laws, implementation of the proposed project would not degrade water quality; therefore, impacts would be *less than significant*.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The project would result in the construction of a 11.3-acre PV solar generation facility on a 39-acre project site. The project would create approximately 11.3 acres of new impervious surface; however, PV solar panels would be installed on a tracking system lifted 1 foot from the ground, which would maintain pervious areas beneath the panels and allow for groundwater infiltration at the project site. In addition, the project would be designed to maintain existing drainage patterns at the project site, which would allow for

continued groundwater recharge. Further, the project does not require any connections to groundwater supply and would not require any long-term operational water use; therefore, the project would not decrease groundwater supply. The project would not interfere with groundwater recharge at the project site or decrease groundwater supplies; therefore, impacts would be *less than significant*.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

c-i) Result in substantial erosion or siltation on- or off-site?

Construction activities would result in approximately 0.05 acre of ground disturbance, including 150 cubic yards of cut and fill activity. The project would disturb less than 1 acre of soils and would not be required to comply with the County Stormwater Ordinance (County Code Section 9.53.010), which requires preparation and implementation of an ECP. Proposed ground-disturbing activities would have the potential to increase erosion and loss of topsoil at the project site. The project has been designed to minimize ground disturbance at the project site, such as conforming to the existing topography of the project site, maintaining existing drainage patterns at the project site, and attaching cables to the tracking system rather than digging trenches, which would reduce the potential for the project to result in substantial erosion or siltation. In addition, a 150-foot buffer would be established around the two unpaved irrigation ditches on the project site to further protect from erosion during construction activities. Operation of the project would not result in long-term activities that could increase erosion or loss of topsoil at the project site. The project would operate for 35 years before being decommissioned. Following decommissioning, the site would be returned to preconstruction conditions; therefore, long-term erosion potential would be consistent with existing conditions. Based on the limited amount of proposed ground disturbance, the project would not result in substantial soil erosion or the loss of topsoil; therefore, impacts would be *less than significant*.

c-ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

The project would result in the construction of a 11.3-acre PV solar generation facility on a 39-acre project site. As previously identified, the project would create approximately 11.3 acres of new impervious surface; however, PV solar panels would be installed on a tracking system lifted 1 foot from the ground, which would maintain pervious areas beneath the panels to avoid a substantial increase in surface water runoff from the site. In addition, the project has been designed to minimize the creation of impervious surfaces at the project site, such as conforming to the existing topography and maintaining existing drainage patterns at the project site, which would reduce the potential for the project to increase the rate or amount of surface runoff. The project would result in less than 1 acre of ground disturbance and would not be required to comply with the County Stormwater Ordinance (County Code Section 9.53.010), which requires the implementation of post-construction stormwater control measures. Based on proposed project design intended to minimize the creation of impervious surfaces at the project site, the proposed project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; therefore, impacts would be *less than significant*.

c-iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

The proposed project has been designed to minimize ground disturbance and creation of impervious surfaces at the project site. Proposed design measures include conforming to the existing topography of the project site, maintaining existing drainage patterns at the project site, and attaching cables to the

tracking system rather than digging trenches. The proposed design would reduce the potential for the project to increase erosion at the project site and contribute to additional sources of polluted runoff. Additionally, PV solar panels would be installed on a tracking system lifted 1 foot from the ground; therefore, pervious areas beneath the panels would be maintained to allow on-site infiltration. The project would result in less than 1 acre of site disturbance and would not be required to comply with the County Stormwater Ordinance (County Code Section 9.53.010), which requires implementation of post-construction stormwater control measures. Based on the proposed project design and associated ground disturbance, the proposed project would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; therefore, impacts would be *less than significant*.

c-iv) Impede or redirect flood flows?

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 06047C0875G (effective date 12/2/2008), the project site is within Zone X, an area of minimal flood hazard (FEMA 2022). The project does not include alteration or other direct impacts to any drainages or surface water features. As previously identified, the project has been designed to minimize impervious surface areas on-site and maintain existing drainage patterns to be consistent with existing conditions. Based on the low potential for flood flows and proposed project design features, the project would not impede or redirect flood flows; therefore, impacts would be *less than significant*.

d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 06047C0875G (effective date 12/2/2008), the project site is within Zone X, an area of minimal flood hazard (FEMA 2022). Additionally, the project site is not located in an area that would be subject to tsunami risk and is not located in proximity to any impounded body of water that would be subject to seiche. The project is not within a flood hazard, tsunami, or seiche zone and would not risk release of pollutants due to project inundation; therefore, *no impacts* would occur.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The project site is in the Merced Subbasin of the San Joaquin Valley Groundwater Basin, which is subject to the sustainable management goals and practices included in the Merced Groundwater Subbasin GSP to achieve long-term sustainable groundwater management. As evaluated in Impact Discussion X(b), the project would not decrease groundwater supply or interfere with groundwater recharge in a manner that would impede sustainable management of the groundwater basin, which is consistent with sustainable management goals of the Merced Groundwater Subbasin GSP, including increasing recharge and reducing groundwater pumping.

The project site is under the jurisdiction of the Central Valley Regional Water Quality Control Board (RWQCB) and would be subject to the *Water Quality Control Plan for the Central Valley Region* (RWQCB 2019), which establishes water quality objectives for beneficial uses of water resources within the Sacramento and San Joaquin River Basins. The project would disturb less than 1 acre of the project site and would not be required to comply with the Central Valley RWQCB General Construction Permit requirements, which are codified in the County Stormwater Ordinance (County Code Section 9.53.010). The project has been designed to minimize ground disturbance and impervious surfaces at the project site, such as conforming to the existing topography of the project site, maintaining existing drainage patterns at the project site, and attaching cables to the tracking system rather than digging trenches, which would reduce the potential for the project to result in substantial erosion or loss of topsoil. PV solar panels would

be installed on a tracking system lifted 1 foot from the ground; therefore, pervious areas beneath the panels would be maintained to allow on-site infiltration. In addition, construction contractors would be required to comply with CCR Title 22 for the handling of hazardous materials, which would reduce the potential for construction-related polluted runoff. Based on proposed project design and required compliance with CCR Title 22, the project would not adversely affect water quality, which is consistent with the Water Quality Control Plan. The project would be consistent with sustainable management of the San Joaquin Valley groundwater basin and the Water Quality Control Plan; therefore, impacts would be *less than significant*.

Conclusion

The project would not result in adverse impacts related to water quality, groundwater quality, or stormwater runoff. The project would not require groundwater resources and would not be located in an area that would be subject to inundation. The project would be consistent with sustainable management of the San Joaquin Valley groundwater basin and the *Water Quality Control Plan for the Central Valley Region*. Therefore, impacts related to hydrology and water quality would be less than significant, and mitigation is not necessary.

Mitigation Measures

Mitigation is not necessary.

XI. Land Use and Planning

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Physically divide an established community?	☐	☐	☐	☒
(b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☒	☐	☐

Setting

The County General Plan consists of 11 elements that serves as the County's "blueprint" or "constitution" for all future land use, development, preservation, and resource conservation decisions. The County Land Use Element identifies goals, policies, and standards for future land use, development, community design, energy efficiency, and agriculture/resource protection in the county. The Land Use Element also describes standards for land use designations within the county. The project site is located within the County's Agriculture land use designation, which provides for cultivated agricultural practices which rely on good soil quality, adequate water availability, and minimal slopes. This is the largest County land use designation by area in the county and is typically applied to areas on the valley floor. As identified in Section II, *Agriculture and Forestry Resources*, Policy LU-2.7 of the Land Use Element identifies solar generation facilities as an allowable use within the Agriculture land use designation (Merced County 2013a).

Environmental Evaluation

a) Would the project physically divide an established community?

Implementation of the project would result in construction and operation of a new PV solar power generation facility. The proposed project would be limited to development on a single parcel and would not result in the removal or blockage of existing public roadways or other circulation paths and would not otherwise include any features that would physically divide an established community; therefore, *no impacts* would occur.

b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

As evaluated throughout this Initial Study, the project would be consistent with standards and policies set forth in the County General Plan, CAP, Climate Change Action Plan, and RTP/SCS. The project would be required to implement Mitigation Measures MM AG-1, MM AQ-1 through MM AQ-4, MM BIO-1 through MM BIO-9, MM CR-1, and MM N-1 to mitigate potential impacts associated with Agricultural Resources, Air Quality, Biological Resources, Cultural and Tribal Cultural Resources, Hazards and Hazardous Materials, Noise, and Utilities and Service Systems, which is consistent with the identified plans and policies intended to avoid or mitigate adverse environmental effects. With implementation of the identified mitigation, the project would not conflict with other local policies or regulations adopted for the purpose of avoiding or mitigating environmental effects; therefore, impacts would be *less than significant with mitigation*.

Conclusion

The project would not physically divide an established community. With implementation of mitigation measures identified throughout this Initial Study, the project would be consistent with the County General Plan, CAP, Climate Change Action Plan, RTP/SCS, and other applicable documents. Therefore, with implementation of Mitigation Measures MM AG-1, MM AQ-1 through MM AQ-4, MM BIO-1 through MM BIO-9, MM CR-1, and MM N-1, impacts related to land use and planning would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM AG-1, MM AQ-1 through MM AQ-4, MM BIO-1 through MM BIO-9, MM CR-1, and MM N-1.

XII. Mineral Resources

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(b) Result in the loss of availability of a locally- important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Setting

The California Surface Mining and Reclamation Act (SMARA) of 1975 requires that the State Geologist classifies land into mineral resource zones (MRZ) according to the known or inferred mineral potential of the land (PRC Sections 2710–2796). The five MRZs used in the SMARA classification designation process for Merced County are defined below (CGS 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.

The project site is located in an MRZ-4 area and is not located near any existing mining operations (CGS 2021).

Environmental Evaluation

a) 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?

b) Would the project result in the loss of availability of a locally- important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

The project site is located in an MRZ-4 area and is not located near any existing mining operations (CGS 2021). The project site is not located in an area with known mineral resources. The project would operate for 35 years and would be decommissioned following operation of the proposed project. Following decommissioning, the site would be returned to preconstruction conditions; therefore, no permanent loss of mineral resources would occur. The project would not result in the loss of availability of known or locally important mineral resources, and *no impacts* would occur.

Conclusion

No impacts to mineral resources would occur as a result of the project, and mitigation is not necessary.

Mitigation Measures

Mitigation is not necessary.

XIII. Noise

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
(a) 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?	☐	☒	☐	☐
(b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
(c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 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?	☐	☐	☐	☒

Setting

The *2030 Merced County General Plan Health and Safety Element* identifies the policies to reduce or eliminate existing and future conflicts between land uses and noise. Table 5 outlines the County's noise level standards for noise-sensitive areas affected by non-transportation noise sources in the county.

Table 5. Non-Transportation Noise Standards

	Outdoor Areas Median (L50) / Maximum (Lmax)[1]		Interior Median (L50)/ Maximum (Lmax)[1]
Receiving Land Use	Daytime	Nighttime	Day or Night
All Residential	55 / 75	50 / 70	35 / 55
Transient Lodging	55 / 75	---	35 / 55
Hospitals & Nursing Homes	55 / 75	---	35 / 55
Theaters and Auditoriums	---	---	30 / 50
Churches, Meeting Halls, Schools, Libraries, etc.	55 / 75	---	35 / 60
Office Buildings	60 / 75	---	45 /65
Commercial Buildings	55 / 75	---	45 /60
Playgrounds, Parks, etc.	65 / 75	---	---
Industry	60 / 80	---	50 / 70

Source: Merced County (2013a)

[1] These standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for 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 Areas include primary outdoor activity areas associated with any given land use at which noise-sensitivity exists and the location at which the County's exterior noise level standards are applied.

[3] Sensitive Interior Areas includes any interior area associated with any given land use at which noise sensitivity exists and the location at which the 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, theaters. Interior noise level standards are applied within noise-sensitive areas of the various land uses with windows and doors in the closed positions.

Notes:

Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.

Since 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 staff or patients.

The outdoor activity areas of these uses (if any) are not typically used during nighttime hours.

Where median (L_{50}) noise level data is 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.

In addition to the standards outlined in Table 5, the following noise policies would be applicable to the proposed project:

Policy HS-7.1: **Noise Standards for New Land Uses.** Require new development projects to meet the standards shown in [Table 5], at the property line of the proposed use, through either project design or other noise mitigation techniques.

Policy HS-7.3: **Existing Rural Sources.** Discourage new noise sensitive land uses in rural areas with authorized existing noise generating land uses.

Policy HS-7.4: **New Noise or Groundborne Vibration Generating Uses.** Require new commercial and industrial uses to minimize encroachment on incompatible noise sensitive land uses. Also consider the potential for encroachment by residential and other 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-7.12: **New Project Noise Mitigation Requirements.** Require new projects to include appropriate noise mitigation measures to reduce noise levels in compliance with the [Table 5] 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 5] 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 5] at the property line of the generating use in anticipation of the future residential development.

County Code Section 10.60, Noise Control, establishes regulations to avoid excessive noise in the county and Section 10.48.050 establishes standards and specifications for noise in the county. Section 10.48.050, Noise, limits construction hours between 7:00 a.m. and 6:00 p.m. daily and prohibits construction noise between 6:00 p.m. and 7:00 a.m. on weekdays or at any time on a weekend day or legal holiday, except for emergency work.

Environmental Evaluation

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Existing ambient noise levels in the project area are primarily dominated by vehicle noise along Elgin Avenue and surrounding agricultural cultivation operations, livestock, and scattered rural residential land uses. During project construction, noise from construction activities may intermittently dominate the noise environment in the immediate project area. The project would require the use of typical construction equipment (e.g., dozers, excavators, etc.) during proposed construction activities. According to the Federal Highway Administration (FWHA), typical noise levels from standard construction equipment generally range from 80 dBA to 85 dBA at 50 feet from the source, as shown in Table 6.

Table 6. Construction Equipment Noise Emission Levels

Equipment Type	Typical Noise Level (dBA) 50 Feet from Source
Concrete Mixer, Dozer, Excavator, Jackhammer, Man Lift, Paver, Scraper	85
Heavy Truck	84
Pneumatic Tools (i.e., pile driving equipment)	85
Concrete Pump	82
Backhoe, Compactor	80

Source: FHWA (2018)

The project site is surrounded by scattered rural residences in all directions. The nearest sensitive receptors to the project site are located approximately 185 feet south and 440 feet north of the project site. There is an existing residential dwelling on the project site, which is currently vacant and would be demolished as part of the proposed project.

Pile driving is proposed during construction and may exceed noise levels outlined in the County General Plan. However, County Code Section 10.60, Noise Control, exempts construction activity between 7:00 a.m. and 6:00 p.m. everyday. if all construction equipment is properly muffled and maintained. Based on the close proximity of noise-sensitive residential uses, Mitigation Measure MM N-1 has been identified to ensure construction equipment is properly muffled and maintained to reduce noise during construction activities, including use of "quiet" pile-driving technology (e.g., pre-drilling of piles, sonic pile drivers, auger cast-in-place, or drilled-displacement, or the use of more than one pile driver to shorten the total pile-driving duration) where feasible. With implementation of Mitigation Measure MM N-1, construction-related noise generated by the project would be consistent with the County's noise standards; therefore, impacts related to construction-related noise would be *less than significant with mitigation*.

The project would establish a 4.4 MWac PV solar power generation facility with a 5,000-square foot equipment pad. The primary source of operational noise includes the installation of transformers, which would be stored on the proposed equipment pad. Based on the manufacturer's specifications, the transformers would be expected to generate a noise level of 62 dB at 50 feet from the source and would run 24 hours a day, 7 days a week. Noise attenuates at a rate of approximately 6 dB per doubling of distance; therefore, noise from the transformer would be consistent with the County's daytime and nighttime exterior noise standards for residential land uses at 200 feet. The property line of the nearest off-site noise-sensitive land uses to the proposed equipment pad are located approximately 275 feet north

and 320 feet south of the proposed transformer. As such, noise from the transformers would fall below the County's daytime and nighttime exterior noise standards for residential land uses. Further, operation of the project would not require regular staff presence at the site; therefore, the project would not be expected to generate a permanent increase in noise from operational vehicle trips or other operational activities. Therefore, impacts related to operational noise would be *less than significant*.

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Installation of the proposed tracking systems would require pile driving, which would generate a temporary increase in groundborne vibration. The Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment* (FTA 2018) provides guidance for assessing vibration levels associated with construction activities. This guidance was used to assess potential impacts as the County has not established construction vibration standards. The nearest sensitive receptors to the project site are located approximately 185 feet south and 440 feet north of the project site. Table 7 shows the FTA criteria for construction vibration damage.

Table 7. Construction Vibration Damage Criteria

Building/Structural Category	PPV (in/sec)[1]
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: FTA (2018)

[1] PPV (in/sec) = peak particle velocity in inches per seconds

According to the FTA's *Transit Noise and Vibration Impact Assessment Manual*, an impact pile driver has an average peak particle velocity (PPV) of 0.644 inches per second (in/sec) at 25 feet from the source and can reach a PPV of 1.518 in/sec at 25 feet from the source. A sonic pile driver has an average PPV of 0.17 in/sec at 25 feet from the source and can reach a PPV of 0.734 in/sec at 25 feet from the source. Using the highest potential PPV that may be generated by pile driving (1.518 in/sec), at 185 feet from the source, pile driving would have an approximate PPV of 0.08 in/sec. Therefore, proposed pile driving activities would fall well below the damage criteria for buildings and would not result in annoyance or damage to nearby single-family residences. Although not required to reduce impacts related to groundborne noise, Mitigation Measure MM N-1 identified in *Impact Discussion XIII.a*, would further reduce groundborne vibration during construction activities. Therefore, the project would not generate excessive groundborne vibration or groundborne noise levels, and impacts would be *less than significant*.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The nearest airport to the project site is Dos Palos Airport, located approximately 2.5 miles southeast. The project site is not located within an airport land use plan or within 2 miles of an airport; therefore, the proposed project would not result in excessive noise levels for people residing or working in the project area, and *no impacts* would occur.

Conclusion

With implementation of Mitigation Measure MM N-1, the project would not result in substantial construction-related or operational noise or groundborne vibration. In addition, the project would not result in excessive noise levels for people residing or working in the project area. Therefore, with implementation of the identified mitigation measures, impacts related to noise would be less than significant.

Mitigation Measures

MM N-1 **Construction Noise Control Best Management Practices.** During construction, the following construction noise best management practices shall be shown on all construction plans and implemented on-site:

a. Construction work hours shall be limited to the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday. No construction shall be permitted on Saturdays, Sundays, or federal or state holidays.

b. Heavy equipment engines shall be covered, and exhaust pipes shall include a muffler in good working condition.

c. Stationary equipment such as compressors, generators, and welder machines shall be located as far away from surrounding residence as possible. The project shall connect to existing electrical service at the site to avoid the use of stationary, diesel-fueled, or other alternatively fueled power generators, if feasible.

d. Impact tools such as jack hammers shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. When use of pneumatic tools is unavoidable, it shall be ensured the tool will not exceed a decibel limit of 85 A-weighted decibels at a distance of 50 feet. Pneumatic tools shall also include a noise suppression device on the compressed air exhaust.

e. No radios or other amplified sound devices shall be audible beyond the property line of the construction site.

f. Use construction equipment that is in good working order and inspect mufflers for proper functionality.

g. Use of "quiet" construction methods and equipment (e.g., improved mufflers, use of intake silencers, engine enclosures) when feasible.

h. Use construction equipment with lower noise emission ratings whenever possible, particularly for air compressors.

i. Prohibit the idling of inactive construction equipment for more than 5 minutes;

j. Measures for notifying the public of construction activities, complaint procedures, and monitoring construction noise levels shall include the following:

    1. Designation of an on-site construction noise manager for the project;
    2. Notify neighboring noise-sensitive receptors within 300 feet of the project construction area at least 30 days in advance of high-intensity noise-generating activities (e.g., pile driving, other activities that may generate noise levels greater than 75 A-weighted decibels at noise-

sensitive receptors) about the timing and estimated duration of the activity;

3. Post a sign on-site describing noise complaint procedures and a complaint hotline number that shall always be answered during construction;
4. Implement a procedure for notifying the planning department of any noise complaints within one week of receiving a complaint.

k. Where feasible, the following additional measures shall be implemented for proposed pile-driving activities:

1. When pile driving is to occur within 600 feet of a noise-sensitive receptor, implement "quiet" pile-driving technology (such as pre-drilling of piles, sonic pile drivers, auger cast-in-place, or drilled-displacement, or the use of more than one pile driver to shorten the total pile-driving duration [only if such measure is preferable to reduce impacts to sensitive receptors]) where feasible, in consideration of geotechnical and structural requirements and conditions;
2. Where the use of driven impact piles cannot be avoided, properly fit impact pile driving equipment with an intake and exhaust muffler and a sound-attenuating shroud, as specified by the manufacturer and/or install a temporary noise barrier; and
3. Conduct noise monitoring (measurements) before, during, and after the pile-driving activity.

XIV. Population and Housing

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
(b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Setting

As of 2021, Merced County had a population of approximately 286,461 residents, which was a 1.9% increase from the 2020 population. The average population per household is approximately 3.29 persons in the county (U.S. Census Bureau 2021). By 2046, Merced County is projected to increase by approximately 82,000 persons (a 29% increase), 34,000 households (a 42% increase), and 27,000 jobs (a 32% increase) (MCAG 2022). The site supports an existing vacant residential structure, a domestic water well, septic system, and several clusters of trees and vegetation on the far east side of the property.

Environmental Evaluation

a) Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The proposed project would result in construction and operation of a new 11.3-acre PV solar power generation facility. The project does not include the development of new residences, businesses, or other uses that could directly induce population growth within the county. Operation of the project would not require regular staff presence and would result in approximately four vehicle trips per year for site inspection and maintenance activities and delivery trips for as-needed equipment replacement once every 10 years. Based on the limited number and nature of employment opportunities generated by the proposed project, operational site inspection and maintenance activities are expected to be conducted by workers from the local workforce and would not require workers to relocate to the project area. Construction activities would require 50 short-term employees during the limited 6-month construction period. Based on the limited duration of employment opportunities generated by the proposed project, the project would not require workers to relocate to the project area. The project would not directly or indirectly induce substantial or unplanned population growth; therefore, impacts would be *less than significant*.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

There is a vacant single-family residence located on the far east side of the property, which would be demolished as part of the proposed project. Because this property is currently vacant, proposed demolition would not displace or necessitate relocation of existing people or housing. Therefore, *no impacts* would occur.

Conclusion

The project would not induce substantial planned or unplanned population growth and would not necessitate the construction of replacement housing elsewhere. Therefore, impacts related to population and housing would be less than significant, and mitigation is not necessary.

Mitigation Measures

Mitigation is not necessary.

XV. Public Services

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Setting

The Merced County Fire Department (MCFD) is responsible for fire protection services within the county. The nearest MCFD station is the Livingston Station located at 1540 Golden Gate Avenue, approximately 1.4 miles southeast of the project site. The Merced County Sheriff's Office is responsible for protecting the life and property of the residents living in the unincorporated areas of Merced County. The Sherriff's Office is located at 700 West 22nd Street, approximately 22 miles northeast of the project site. The nearest Sherriff's Office is the Jess "Pooch" Bowling Justice Center located at 445 I Street in Los Banos, approximately 12.4 miles northwest of the project site. There are a total of 20 school districts with 90 schools, one community college district with two campuses, and one public university in Merced County. There are approximately 114,000 acres of parks and recreational facilities in the county that offer a variety of amenities such as picnicking, swimming, boating, hunting, bird watching, playgrounds, sports fields, and hiking.

Environmental Evaluation

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

The project does not include the construction of new residences or buildings that would directly increase demand on existing fire protection services. The project would be limited to the construction and operation of a PV solar generation facility and would not facilitate substantial planned or unplanned population growth in a manner that would increase demand on existing fire protection services. The project would not require new or physically altered governmental facilities for fire protection services; therefore, *no impacts* related to fire protection would occur.

Police protection?

The project does not include the construction of new residences, businesses, or other uses that would directly increase demand on existing police protection services. The project would be limited to construction and operation of a PV solar generation facility and would not facilitate substantial planned or unplanned population growth in a manner that would increase demand on existing police protection services. The project would not require new or physically altered governmental facilities for police protection services; therefore, *no impacts* would occur.

Schools?

The project does not include the construction of new residences or other uses that could facilitate an increase in school-aged children within the project area; therefore, the project would not create an increased demand on local schools, and *no impacts* would occur.

Parks?

The project does not include the construction of new residences, businesses, or other uses that could facilitate population growth and increase demand on existing public park facilities in the project area. Therefore, the proposed project would not require the construction of new or physically altered public park facilities, and *no impacts* would occur.

Other public facilities?

As discussed in Section XIV, *Population and Housing*, the project would not result in substantial planned or unplanned population growth. The project does not propose features that would significantly increase the demand on public facilities, such as libraries or post offices, or result in the need for new or physically altered governmental facilities; therefore, *no impacts* would occur.

Conclusion

The project would not increase demand for fire or police protection services, schools, parks, libraries, or other public facilities. Therefore, no impacts related to public services would occur as a result of the project, and mitigation is not necessary.

Mitigation Measures

Mitigation is not necessary.

XVI. Recreation

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a) 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?	☐	☐	☐	☒
(b) 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?	☐	☐	☐	☒

Setting

Merced County contains several federal, state, and County parks and recreational areas in addition to public open space areas. There are approximately 114,000 acres of parks and recreational facilities in the county that offer a variety of amenities, such as picnicking, swimming, boating, hunting, bird watching, playgrounds, sports fields, and hiking. The nearest public park to the project site is Frederick Worden Park, approximately 0.75 mile northwest of the project site.

Environmental Evaluation

a) 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?

As discussed in Section XIV, *Population and Housing*, the project does not include the development of new residences, businesses, or other uses that could directly induce population growth within the county. Construction activities are expected to be conducted by workers from the local employment force and operation of the project would be limited to periodic site inspection and maintenance activities approximately four times per year; therefore, construction and operation of the proposed project is not anticipated to require workers to relocate to the project area. Since the project would not directly or indirectly induce population growth in the project area, the proposed project would not increase the use of existing recreational facilities in a manner that would lead to substantial deterioration of existing recreational facilities; therefore, *no impacts* would occur.

b) 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?

The project does not include the development of new or expanded recreational facilities; therefore, *no impacts* would occur related to adverse physical effects on the environment as a result of construction or expansion of recreational facilities.

Conclusion

The project would not increase the use of existing recreational facilities in a manner that would lead to substantial deterioration of existing recreational facilities or require the development of new or expanded recreational facilities. Therefore, no impacts would occur, and mitigation is not necessary.

Mitigation Measures

Mitigation is not necessary.

XVII. Transportation

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
(b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
(c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
(d) Result in inadequate emergency access?	☐	☐	☒	☐

Setting

The RTP/SCS identifies strategies to ensure that the Merced County transportation system will continue to operate efficiently in the future with sufficient capacity to meet demand and that mobility options are available for county residents (MCAG 2022).

The *2030 Merced County General Plan Transportation and Circulation Element* establishes goals and policies to meet the needs of motorists, bicyclists, and pedestrians in addition to the needs for the movement of farm equipment and agricultural commodities. Since the circulation needs of urban areas are significantly different than the needs of rural areas, the County's functional roadway classification system includes distinct categories for urban and rural areas (Merced County 2013a). Table 8 identifies the desired roadway characteristics for each functional roadway classification.

The project site is located off of Elgin Avenue, which is classified as a principal arterial road in a rural area (Merced County 2013a).

Table 8. Functional Classification – Desired Roadway Characteristics

Location	Functional Classification	Right-of-Way (feet) [1]	Lanes[2]	LOS Analysis Threshold[3]	Intersecting Roadways[4]	Private Property Access[5]	Mobility / Operating Speed[6]
Urban	Freeway	Varies	4–8	D	Interchange at 1-mile spacing	None	High
	Expressway	150–180	4–6	D	1 per ½ mile	None	High
	Principal Arterial	100–180	2–6	D	1 per ¼ mile	Very Limited	Medium–High
	Minor Arterial	60–100	2–4	D	1 per ¼ mile	Limited	Medium
	Collector	60–90	2	D	1 per 1/8 miles	Limited	Low–Medium
	Local	46–60	2	D	No Limit (100-foot offset min.)	Controlled	Low
Rural	Freeway	Varies	4–8	D	Interchange at 2-mile spacing	None	High
	Principal Arterial	Varies	2–4	C	1 per ½ mile	Very Limited	High
	Minor Arterial	80–120	2–4	C	1 per ½ mile	Limited	Medium–High
	Major Collector	60–90	2–3	C	1 per ¼ mile	Limited	Medium–High
	Minor Collector	60	2	C	1 per ¼ mile	Limited	Medium–High
	Local	60	2	C	1 per ¼ mile	Controlled	Low–High

Source: Merced County (2013a)

[1] Right-of-Way. The right-of-way widths shown represent typical right-of-way widths needed to accommodate the number of travel lanes necessary to support anticipated traffic volumes, shoulders, roadside ditches (rural roadways), curb, gutter, sidewalk, and bicycle lanes (where appropriate). Additional right-of-way width may be necessary at approaches to intersections to accommodate turn pockets.

[2] Lanes. The number of lanes shown represents the typical number of lanes likely to be necessary for the various types of roadways. In unusual cases, additional lanes may be necessary to accommodate higher traffic volumes.

[3] Level of Service (LOS) Analysis Threshold. The LOS thresholds indicated in this table represents the maximum acceptable weekday AM or PM Peak Hour LOS. Whenever a traffic analysis is prepared as part of a project approval, improvements need to be identified to ensure the resulting operating LOS does not exceed these threshold values.

[4] Intersecting Roadways. The values in this column represent the typical maximum number of intersections along the various types of roadways. In some cases, the number of intersections may be greater; however, a traffic analysis will be required indicating that the safety and function of the roadway will not be significantly compromised.

[5] Private Property Access. Private property access to roadways maintained by Merced County is granted through the issuance of an encroachment permit by the Department of Public Works. No access to private property will be permitted on Freeways or Expressways. Access to local roads will generally be approved; however, guidelines for driveways on local roadways in urban areas have been established in the Merced County Improvement Standards and Specifications. Generally, driveways on other roadway types will be permitted; however, the number of driveways will be limited to preserve the safety and function of the roadway. In some cases, joint driveways serving more than one parcel may be required.

[6] Mobility/Operating Speed. The descriptions in this column represent the perceived level of mobility (usually represented by operating speed) a motorist may anticipate experiencing on the various roadway types during non-peak hours.

Environmental Evaluation

a) Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

The project site is located off of Elgin Avenue, which is classified as a principal arterial road in a rural area. The County Transportation and Circulation Element establishes Level of Service (LOS) standards for roadways within the county. As shown in Table 7, LOS C is considered an acceptable LOS for principal arterial roads in rural areas. During peak construction activities, it is anticipated that up to 50 construction workers would be on-site and no more than 50 daily truck trips to transport material and equipment would occur. Construction activities would be limited to a 6-month period and would not result in a long-term increase in vehicle trips to and from the site in a manner that could increase vehicle congestion along proximate roadways. Operation of the project would result in approximately four vehicle trips per year for site inspection and maintenance activities and delivery trips for as-needed equipment replacement once every 10 years. Based on the limited number of vehicle trips generated by the project, implementation of the proposed project would result in a negligible number of new vehicle trips along Elgin Avenue and would not reduce existing LOS in the area. In addition, based on the limited number of vehicle trips generated by the proposed project, the project would be consistent with applicable VMT-reduction goals included in the RTP/SCS. Based on the limited number of vehicle trips generated by the project, the project would be consistent with the County Transportation and Circulation Element and RTP/SCS; therefore, impacts would be *less than significant*.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

According to the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (California Governor's Office of Planning and Research [OPR] 2018), projects that would not generate a potentially significant level of VMT, that are consistent with an SCS or general plan, or that would generate or attract fewer than 110 trips per day would not result in significant transportation impacts. During construction, it is anticipated that up to approximately 50 construction workers would be on-site and no more than 50 daily truck trips would be required to transport material and equipment; therefore, the average daily combined vehicle and truck trips during construction would be less than 100 trips per day. Operational vehicle trips generated by the proposed project would be limited to a total of four vehicle trips per year for site inspection and maintenance activities and delivery trips for as-needed equipment replacement once every 10 years. Based on the limited number of construction and operational vehicle trips, the project would not result in or exceed 110 trips per day and would not generate a significant increase in VMT; therefore, project impacts would be *less than significant*.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The project site would be accessed via an existing 15-foot-wide unpaved driveway. The project includes improvements to the existing access road and driveway approaches as needed to meet required County standards, such as minor widening and application of additional aggregate base. The access road improvements would be required to comply with Merced County Department of Public Works

Improvement Standards and Specifications to reduce potential hazards related to road design. The project would be consistent with surrounding land uses and would not introduce new incompatible uses (i.e., farm equipment) along nearby roadways. Based on required compliance with Merced County Department of Public Works Improvement Standards and Specifications, proposed access road improvements would not substantially increase roadway hazards; therefore, potential impacts would be *less than significant*.

d) Would the project result in inadequate emergency access?

The project site would be accessed via an existing 15-foot-wide driveway from Elgin Avenue that would be improved to meet applicable County and CAL FIRE standards (e.g., improved to add aggregate base, meet minimum width requirements, etc.). The access road would also be required to comply with requirements included in the most recent CFC and Merced County Department of Public Works Improvement Standards and Specifications for access roads to ensure adequate emergency access to and from the project site. Based on required compliance with CAL FIRE, CFC, and Merced County Public Works requirements, the proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan; therefore, impacts would be *less than significant*.

Conclusion

The project would not generate a substantial number of new vehicle trips, generate a significant increase in VMT, or conflict with a program plan, ordinance, or policy addressing the circulation system. The access road would be required to comply with requirements included in the most recent CFC and Merced County Department of Public Works Improvement Standards and Specifications for access roads reduce roadway hazards and to ensure adequate emergency access to and from the project site.

Mitigation Measures

Mitigation is not necessary.

XVIII. Tribal Cultural Resources

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
(i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Setting

Approved in 2014, AB 52 added tribal cultural resources to the categories of resources that must be evaluated under CEQA. Tribal cultural resources are defined as either of the following:

1. Sites, features, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    a. Included or determined to be eligible for inclusion in the CRHR; or
    b. Included in a local register of historical resources as defined in PRC Section 5020.1(k).
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c). In applying these criteria for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe.

Recognizing that tribes have expertise with regard to their tribal history and practices, AB 52 requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a proposed project if they have requested notice of projects proposed within that area. If the tribe requests consultation within 30 days upon receipt of the notice, the lead agency must consult with the tribe regarding the potential for adverse impacts on tribal cultural resources as a result of a project. Consultation may include discussing the type of environmental review necessary, the presence and/or significance of tribal cultural resources, the level of significance of a project's impacts on the tribal cultural resources, and available project alternatives and mitigation measures recommended by the tribe to avoid or lessen potential impacts on tribal cultural resources.

Environmental Evaluation

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a-i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

a-ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

No California Native American tribes have requested to be notified of proposed projects within Merced County pursuant to AB 52.

Construction activities would result in approximately 0.05 acre of ground disturbance, including 150 cubic yards of cut and fill activity. Based on a records search conducted at the CCIC and of the NAHC Sacred Lands File, there are no previously recorded archaeological resources within the project area. During the pedestrian field survey, historic trash and foundational remnants were encountered within the project area; however, no other cultural archaeological resources were identified within the project area (SWCA 2023). Mitigation Measure MM CR-1 has been included in the unlikely event that previously unidentified cultural resources are uncovered during proposed ground-disturbing activities. Based on implementation of Mitigation Measure MM CR-1, the project would not result in adverse impacts to known or unknown cultural resources; therefore, impacts would be *less than significant with mitigation*.

Conclusion

With implementation of Mitigation Measure MM CR-1, the project would not result in adverse impacts to known or unknown tribal cultural resources. Therefore, with implementation of Mitigation Measure MM CR-1, impacts related to tribal cultural resources would be less than significant.

Mitigation Measures

Implement Mitigation Measure MM CR-1.

XIX. Utilities and Service Systems

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☒	☐	☐
(b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
(c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
(d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
(e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Setting

The project site is located in the Merced Subbasin of the San Joaquin Valley Groundwater Basin. There is a total of nine water and sewer districts that provide potable water and sewer collection services to residents in the county. There are two active solid waste landfills within the county that are owned and operated by the Merced County Regional Waste Management Authority (MCRWMA). The Highway 59 Landfill, located at 7040 North Highway 59, accepts mixed municipal waste, green and wood materials, tires, and household hazardous wastes (California Department of Resources Recycling and Recovery [CalRecycle] 2005). The Billy Wright Landfill (BWL), located at 17173 South Billy Wright Road in Los Banos, accepts mixed municipal waste, construction and demolition waste, and agricultural waste (CalRecycle 2010).

Environmental Evaluation

a) 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?

The project includes the construction of a PV solar power generation facility and concrete equipment pad, and installation of additional power poles within the footprint of the proposed project. As evaluated throughout this Initial Study, the project has the potential to result in adverse impacts related to Agricultural Resources, Air Quality, Biological Resources, Cultural and Tribal Cultural Resources, Hazards and Hazardous Materials, Noise, and Utilities and Service Systems. Mitigation Measures

MM AG-1, MM AQ-1 through MM AQ-4, MM BIO-1 through MM BIO-9, MM CR-1, and MM N-1 have been included to avoid and/or minimize adverse impacts to less-than-significant levels. Therefore, with implementation of the identified mitigation measures, construction of utility infrastructure would not result in adverse impacts to the environment; therefore, potential impacts would be *less than significant with mitigation*.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

The project does not require any connections to water and would not require any long-term operational water use. The solar PV panels would be dry cleaned once a year using a smart robot dry-cleaning system and would not require the use of water. During construction, water may be used for dust suppression; however, any water used during construction would be limited in volume and supplied from off-site sources. Therefore, *no impacts* would occur.

c) Would the project 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?

Operation of the project does not include connection to any public or private wastewater treatment providers. Portable restrooms would likely be used by workers and other personnel throughout the construction period; therefore, the project would not require short- or long-term connections to wastewater treatment providers and *no impacts* would occur.

d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Construction of the project may result in a temporary increase in solid waste, which would be disposed of in accordance with applicable state and local laws and regulations, such as California's Green Building Standards Code (CALGreen) Sections 4.408 and 5.408, which requires diversion of at least 75% of construction waste. Based on required compliance with CALGreen regulations, construction of the project would not generate solid waste in excess of local infrastructure capacity. Solid waste generated during project construction would be disposed of at either the Highway 59 Landfill or BWL, which have adequate capacity to accept the marginal amount of solid waste generated by the proposed project. Operation of the project would not require regular staff presence and would result in approximately four vehicle trips per year for site inspection and maintenance activities and delivery trips for as-needed equipment replacement once every 10 years; therefore, the project would generate minimal solid waste during operation. The project would operate for 35 years before being decommissioned. Following the lifespan of the proposed project, decommissioned materials would be recycled. Any excess solid waste generated during decommissioning would be disposed of at either the Highway 59 Landfill or BWL and would be required to comply with applicable federal, state, and local waste requirements in place at that time. The proposed project would not generate waste in excess of state or local standards or in excess of the capacity of local infrastructure; therefore, impacts would be *less than significant*.

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

As previously described, operation of the project would not result in the long-term generation of solid waste. Construction-related waste (i.e., demolished materials) would be disposed of according to federal and state regulations, including CALGreen standards for diversion of construction waste. Operation of the

project would not require regular staff presence and would result in approximately four vehicle trips per year for site inspection and maintenance activities and delivery trips for as-needed equipment replacement once every 10 years; therefore, the project would generate minimal solid waste during operation. The project would operate for 35 years prior to decommissioning. Solid waste generated during decommissioning would also be required to comply with applicable federal, state, and local waste requirements in place at that time. Therefore, impacts would be *less than significant*.

Conclusion

Implementation of Mitigation Measures MM AG-1, MM AQ-1 through MM AQ-4, MM BIO-1 through MM BIO-9, MM CR-1, and MM N-1 would reduce potential adverse environmental impacts related to implementation of the proposed PV solar power generation facility to less-than-significant levels. The project does not require connection to groundwater resources or a local water or wastewater provider. The project would not generate solid waste in exceedance of state or local regulations. Therefore, with implementation of the mitigation measures identified below, impacts related to utilities and service systems would be less than significant.

Mitigation Measures

Implement Mitigation Measures MM AG-1, MM AQ-1 through MM AQ-4, MM BIO-1 through MM BIO-9, MM CR-1, and MM N-1.

XX. Wildfire

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
(a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
(b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
(c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
(d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

Setting

According to the CAL FIRE Fire Hazard Severity Zone (FHSZ) Viewer, the project site and surrounding area is located in a Local Responsibility Area (LRA) (CAL FIRE 2022). According to the *Merced County Multi-Jurisdictional Hazard Mitigation Plan*, CAL FIRE has designated Dos Palos as a community that is at increased risk of wildfire occurrence; however, the project site is located within a portion of the community with a low risk of wildfire (Merced County 2021).

Environmental Evaluation

a) 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?

The proposed project would result in the construction and operation of an 11.3-acre PV solar generation facility in an area with low risk of wildfire occurrence. The project site would be accessed via an existing 15-foot-wide driveway that would be improved to meet applicable County and CAL FIRE standards (e.g., improved to add aggregate base, meet minimum width requirements, etc.). The driveway would also be required to comply with the most recent CFC and County Department of Public Works Improvement Standards and Specifications for access roads to ensure adequate emergency access to and from the project site. Operation of the project would be limited to periodic maintenance and inspection activities up to four times per year and would not generate a substantial number of people or vehicle trips within the area that could otherwise impede emergency response or evacuation efforts within the project area. Based on required compliance with CFC and County Public Works requirements, the project would not substantially impair an adopted emergency response plan or emergency evacuation plan; therefore, impacts would be *less than significant*.

b) Due to slope, prevailing winds, and other factors, if located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

The project site is located approximately 0.5 mile north of the city of Dos Palos and is characterized by relatively flat topography with a low potential for wildfire occurrence. The project includes the construction of an 11.3-acre PV solar generation facility on a previously undeveloped portion of the project site. The proposed PV solar generation facility would be required to comply with Section 1204.4 of the most recent CFC, which identifies requirements for solar panel installation to reduce the potential for wildfire ignition at the project site. In addition, vegetation maintenance would occur during periodic maintenance and inspection activities at the project site, which would further reduce the potential for wildfire ignition at the project site. The proposed project would be sited in an area with low risk of wildfire and would be required to comply with requirements of the most recent CFC; therefore, implementation of the proposed project would not increase risk of wildfire at the project site, and impacts would be *less than significant.*

c) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

The project site and surrounding area is not located in a high or very high FHSZ (CAL FIRE 2022). The project includes the construction of a new 11.3-acre PV solar generation facility, equipment pad, and one to eight additional utility poles along Elgin Avenue. The proposed PV solar generation facility and associated infrastructure would be required to comply with regulations included in Section 1204.4 of the most recent CFC to reduce the potential for wildfire ignition at the project site. Based on required compliance with the CFC, the proposed project would not exacerbate fire risk within the project area; therefore, impacts would be *less than significant*.

d) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project 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?

The project area is not designated as a high or very high FHSZ. Based on the low risk of wildfire within the project area, hazards associated with wildfire, including post-fire instability or drainage changes, have a low potential to occur. Further, the project does not include the development of occupiable structures that could be damaged or create a hazard for nearby residents; therefore, impacts would be *less than significant.*

Conclusion

The project site is located in an area with low risk of wildfire and the proposed project would not exacerbate wildfire or post-wildfire risk. Therefore, impacts would be less than significant, and mitigation is not necessary.

Mitigation Measures

Mitigation is not necessary.

XXI. Mandatory Findings of Significance

	Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a)	Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
(b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
(c)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Environmental Evaluation

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

As discussed in the preceding sections, the project has the potential to significantly degrade the quality of the environment, including effects on biological and cultural resources. The project's proposed construction activities have the potential to result in adverse impacts to special-status wildlife species, as discussed in Section IV, *Biological Resources*, of this document. Proposed ground-disturbing activities are not anticipated to adversely affect any known or unknown cultural resource sites within the project area (SWCA 2023). Further, Mitigation Measure CR-1 has been included in the unlikely event that previously unidentified cultural resources are uncovered during proposed ground-disturbing activities. Implementation of Mitigation Measures BIO-1 through BIO-9 and CR-1 would reduce potential impacts a less-than-significant level.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

When project impacts are considered along or in combination with other impacts, the project-related impacts may be significant. Construction and operation of the project would contribute to cumulative impacts related to agricultural resources, air quality, biological resources, cultural resources, and noise. Mitigation measures have been incorporated into the project to reduce project-related impacts to a less-than-significant level. Based on implementation of Mitigation Measures MM AG-1, MM AQ-1 through MM AQ-4, MM BIO-1 through MM BIO-9, MM CR-1, and MM N-1, the cumulative effects of the proposed project would be less than significant.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

The project would result in air emissions during construction of the project. Mitigation measures have been identified that would reduce these project-specific impacts to a less-than-significant level; therefore, the project would not result in substantial, adverse environmental effects to human beings, either directly or indirectly.

Conclusion

Based on implementation of Mitigation Measures MM AG-1, MM AQ-1 through MM AQ-4, MM BIO-1 through MM BIO-9, MM CR-1, and MM N-1, all potential impacts associated with the construction and operation of the proposed project would be mitigated to less-than-significant levels.

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APPENDIX A

Dos Palos Clean Power Project Site

APPENDIX B

Air Quality and Greenhouse Gas Emissions Memorandum

APPENDIX C

Biological Resources Species Lists