Community and Economic Development
Planning Division

Jamie Bax
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PLANNING COMMISSION DATE: December 6, 2022

AGENDA ITEM: #1

CUP	**#2022-013**	**8.0 megawatt (MW) solar photovoltaic energy generating facility to interconnect to a PG&E preexisting electrical distribution system**
APN	**#030-161-001**	**Applicant: RPCA Solar 1, LLC** **Owner: Roger J Schuh**
CEQA	**MND #2022-14**	**Mitigated Negative Declaration**

REQUEST:

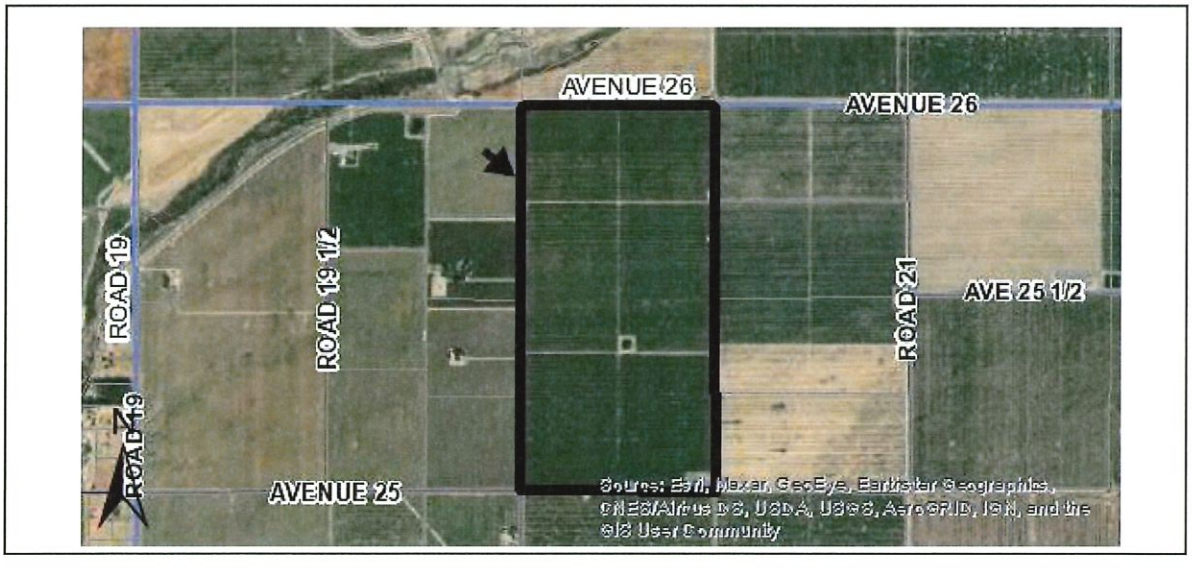
The applicant is requesting to develop and construct an approximately 8MWac solar photo-voltaic energy generating facility on approximately 49-acres of a 319-acre parcel. The Project will be constructed in two phases and will interconnect to a PG&E preexisting electrical distribution system.

LOCATION:

On the south side of Avenue 26 approximately 3/4 mile west of its intersection with Road 21 (no situs) Chowchilla.

ENVIRONMENTAL ASSESSMENT:

A Mitigated Negative Declaration (MND#2022-14) has been prepared and is subject to approval by the Planning Commission.



RECOMMENDATION: Staff recommends approval of CUP #2022-013 subject to conditions, Mitigated Negative Declaration #2022-14, Mitigation Monitoring Program, Findings of Fact, and associated Resolution.

CUP # 2022-013
STAFF REPORT

GENERAL PLAN DESIGNATION (Exhibit A):

SITE:	AE (Agriculture Exclusive) Designation
SURROUNDING:	AE (Agriculture Exclusive) Designation, OS (Open Space) Designation

ZONING (Exhibit B):

SITE:	ARE-40 (Agriculture Rural Exclusive) 40 Acre District
SURROUNDING:	ARE-40 (Agriculture Rural Exclusive) 40 Acre District, ARE-20 (Agriculture Rural Exclusive) 20 Acre District, POS (Public Open Space) District

LAND USE:

SITE:	Agriculture
SURROUNDING:	Agriculture

SIZE OF PROPERTY: 318.48 Acres

ACCESS (Exhibit D): Access to the site is via Avenue 26

BACKGROUND AND PRIOR ACTIONS:

Parcel was previously in a Williamson Act Contract, but it exited non-renewal in 2017.

PROJECT DESCRIPTION:

This is a request for a Conditional Use Permit (#2022-013) to construct a solar photovoltaic electric generating facility on approximately 49-acres of a 319-acre parcel in Madera County, just east of the City of Chowchilla. The construction will take place over two phases up-to a six (6)-month period and is anticipated to operate for a period of up to 35 years. At peak production, the Project will generate 8 MWac solar. The power generated from this facility will be sold to PG&E through a long-term Power Purchase Agreement (PPA). Additionally, the Project may be equipped with energy storage technology that will allow on site renewable energy generation to be stored and dispatched to the grid when needed. At the end of the Project's operation life, it will be completely decommissioned and removed from the property. All materials will be recycled to the greatest extent possible, and all debris will be removed. The Project will supply enough clean energy to power up to 1930 residential homes per year.

ORDINANCES/POLICIES:

Chapter 18.92 of the Madera County Zoning Ordinance outlines the procedures for the processing and approval of conditional use permits.

Chapter 18.58 of the Madera County Zoning Ordinance outlines the additional

restrictions to certain uses in an ARE-40 (Agricultural, Rural, Exclusive) 40 Acre District.

Chapter 18.94.180 of Madera County Zoning Ordinance outlines additional restrictions where solar farms are permitted by conditional use permit.

Madera County General Plan Policy Document (Part 1) outlines the AE (Agricultural Exclusive) designation.

ANALYSIS:

This is a request for a Conditional Use Permit (#2022-013) to construct an 8.0 megawatt (MW) solar photovoltaic electric generating facility that will be constructed in two phases and will interconnect to a PG&E preexisting electrical distribution system. The proposed solar facility will cover approximately 49-acres of the 319-acre parcel (2,135,793 sq. ft.). The Project will be constructed in two phases and, once operational, generate a combined total of 8 megawatts (MW) alternating current (AC) (12 MW direct current [DC]) of clean, reliable solar energy. Phase one of the Project is designed as a 3 MW (AC) tracker system situated on approximately 19.11 acres and accessed from Avenue 26. Phase two of the Project is designed as a 5 MW (AC) tracker system situated on approximately 29.40 acres and it will be accessed similarly as Phase one. Phase one and Phase two of the Project will interconnect to Pacific Gas and Electric Company's (PG&E's) pre-existing on-site electrical distribution system. The combined power generated from this facility will be sold to PG&E through a long-term Power Purchase Agreement (PPA). Additionally, the Project will be equipped with energy storage technology that will allow on site renewable energy generation to be stored and dispatched onto the grid when needed. The solar facility is to be secured with a 6'-0'' tall galvanized woven steel fence with barbed wire added on top for total height of 7'-0".

Once operational, the Project will use approximately 22,221 solar modules and 64 string inverters to convert the sun's energy into usable AC power. Single-axis tracking technology will be utilized to allow the modules to efficiently track the sun throughout the day and maximize the efficiency of solar collection. The modules will be mounted on a steel racking system, which will be anchored into the ground using driven steel piers. The overall height of the array will be no more than 15-feet tall.

Once construction is complete, operations would take place year-round during daylight hours when there is sufficient sunlight to begin operation of the solar field. An estimated two to four offsite employees would be reserved for maintenance and dispatched to the site for routine scheduled maintenance and on an as-needed basis for unscheduled maintenance.

A biological resources assessment was performed to assess the potential impact for special-status plant and animal species or their habitat, and sensitive habitats such as wetlands within the project Area. The proposed solar facility project does not provide a high-quality wildlife movement corridor. However, common species as well as some special-status species might travel through the Project Area to reach

adjacent areas. The project's potential impacts are listed in the submitted biological resources assessment (Exhibit I). Mitigation placed to prevent potential impact from the solar facility is listed in the mitigation monitoring report form.

A cultural resources inventory report was conducted for the proposed solar facility. The cultural resource inventory of the project site included a review of the natural and cultural environment including the prehistory, ethnography, and history; a review of historic maps; record search results from the Southern San Joaquin Valley Information Center; consultation with the Native American Heritage Commission; Native American correspondence; and a pedestrian survey. As a result of these efforts, the study determined there are no previous or newly identified cultural resources in the project site. These results, compounded with the high amount of disturbance due to past and current use as agricultural land, have reduced the potential for subsurface cultural materials within the site. Mitigation for the management of unanticipated discoveries is provided on the mitigation monitoring report form.

The property is situated on the south side of Avenue 26 approximately 3/4 mile west of its intersection with Road 21 (no situs) Chowchilla. The property is surrounded by multiple agricultural parcels. Surrounding properties include ARE-20 (Agricultural, Rural, Exclusive) zoned parcels, ARE-40 (Agricultural, Rural, Exclusive) zoned parcels, and POS (Public Open Space) zoning located on parcels to the north. Lots in the area range from 35 acres to 400+ acres. This project has been circulated to internal and external departments. These external departments include California Department of Fish and Wildlife, California Department of Transportation, California Regional Water Quality Control Board, California Regional Water Quality Control Board, San Joaquin Valley Air Pollution Control District, Madera County Sheriff, Madera County Fire, Chowchilla Yokuts Tribe, Dumna Wo Wah Tribal Government, Picayune Rancheria of the Chukchansi Indians, and Table Mountain Rancheria. Comments were received from Environmental Health, Fire Marshal, Public Works, and California Department of Transportation.

The Environmental Health Division states that the construction and then ongoing operation must be done in a manner that shall not allow any type of public nuisance(s) to occur including but not limited to the following nuisance(s); Dust, Odor(s), Noise(s), Lighting, Vector(s) or Litter. This must be accomplished under accepted and approved Best Management Practices (BMP) and as required by the County General Plan, County Ordinances and any other related State and/or Federal jurisdiction. Project must maintain all Local and State setback requirements as it relates to municipal or private water and wastewater services. During the application process for required County permits, a more detailed review of the proposed project's compliance with all current local, state & federal requirements will be reviewed.

Public Works stated the easterly property line of the subject parcel aligns with Road 20 1/2 roadway alignment to the south. Road 20 1/2 is designated as a Minor Road with a 60-foot road right of way (30 feet on each side of the road centerline). It is

asked that the 30 feet along the easterly property line be dedicated/reserved as an easement for future public road access. Prior to any construction where such construction takes place within an existing public right-of-way, the developer is required to apply for an Encroachment Permit from the Public Works Department. Said permit must be approved prior to commencing the work. All proposed driveway approaches must be designed per county standard ST-24B for commercial use unless approved otherwise. Such approaches will be inspected by the Public Works inspector. Except as approved and permitted by the County, all appurtenances, such as fences along with private signs, shall be located outside of the public road right-of-way. the applicant or its representatives shall practice best management practices during the construction stage of the solar facility. No mud and/or debris shall be tracked onto public roads. No construction equipment or vehicles of any kind be allowed to block the flow of traffics or causing any sight distances/safety hazards to the public within the area of work. The applicant or his contractors will be responsible for any damages to the road during the construction of the facility, including but not limited to, existing pavement or neighboring properties. At the time of applying for the building permits, if any grading is to occur, the applicant is required to submit a grading, drainage, and erosion control plans to the Public Works Department for review. Such improvement plans shall be prepared by a licensed professional. Contractor and Owner are responsible to ensure that the proper BMPs and erosion control measures are in place. Sediment is not allowed to leave the site during construction. The contractor and owner will be responsible for any damage caused by runoff from construction site that is not permitted. All National Pollution Discharge Elimination System (NPDES) storm water regulations and standards shall be met. It is possible that the quality of storm water may be affected by pollutants. The applicant shall mitigate any impacts associated with storm water contamination caused by this project. A Storm Water Pollution Prevention Plan (SWPPP) is required for all projects 1-acre or more of site disturbance. Contractor shall be responsible for locating all underground utilities prior to the start of any work by contacting Underground Service Alert (USA) 48 hours prior to any excavation at 1-800-227-2600 Contractor shall be responsible for contacting the appropriate party in advance of any work for necessary inspections in compliance to these plans, standard plans, and standard specifications.

The Fire Marshal stated that 20-foot-wide all-weather vehicle access shall be provided within 150 feet of all portions of the project. A KNOX box entry device shall be installed in conjunction with all gated access. All proposed gated openings shall be 2 feet wider than the travel way.

The only water required for operation would be water consumed by panel washing and small quantities used for dust mitigation. Water would be supplied by the project proponent and trucked in from offsite sources. No trash will be generated. The noise generated by the power conversion devices and transformers is expected less than significant and not expected to increase above an ambient level outside the Project fence line. Since the proposed project is an unmanned solar facility, there would be little to no impact to the traffic load.

The project is proposed in an area largely designated as unique farmland by the State of California. Because the solar energy storage system's supporting equipment would sit on the surface of the land when they are removed after the project's lifetime the land would be largely unaltered from its natural state. The project would use BMPs to ensure the collection and recycling of PV modules and batteries and minimize the potential for such materials to be disposed of as municipal waste.

The construction of solar energy facilities in Madera County has several benefits. Notably, PV solar power is a renewable form of power generation that does not involve any harmful air emissions. On a statewide basis, the development of solar energy facilities contributes the state's existing goal of carbon neutrality by 2045. PV solar power also requires minimal water use for periodic washing of the panels and wouldn't add strain upon local groundwater supplies.

If this project is approved, the applicant will need to submit a check, made out to the County of Madera, in the amount of $2,598.00 to cover the Notice of Determination (CEQA) filing at the Madera County Clerks' office. The amount covers the $2,548.00 Department of Fish and Wildlife fee that took effect January 1, 2022, and the County Clerk $50.00 filing fee. In lieu of the Fish and Wildlife fee, the applicant may choose to contact the Fresno office of the Department of Fish and Wildlife to apply for a fee waiver. The County Clerk Fee, Department of Fish and Wildlife Fee (or waiver if approved) is due within five days of approval of this permit at the Planning Commission. If the Notice of Determination (CEQA) filing is paid after December 31, 2022 the amount of $2,814.00 will need to be submitted to cover the new fee that takes effect on January 1, 2023.

FINDINGS:

The Madera County Zoning Ordinance requires that the following findings of fact must be made by the Planning Commission to grant approval of this permit:

1. The proposed project does not violate the spirit or intent of the zoning ordinance. The Zone District allows for public and quasi-public, uses which includes public utilities, with an approved conditional use permit.

2. The request will not be contrary to the public health, safety, or general welfare of the citizens of Madera County. The facility is in a predominately agricultural portion of the County which allows for the proposed use. The proposed solar facility will provide a local, renewable energy source that will help Madera County become more self-sustaining, economically viable, and increase environmental conditions.

3. The proposed project will not be hazardous, harmful, noxious, offensive, or a nuisance because of noise, dust, smoke, odor, glare, or similar factors. The project must adhere to the conditions of approval as well as mitigation measures. The project will not generate hazardous, harmful, noxious, or offensive odors. The solar facility will assist with reduction of greenhouse gas production and assist in the creation of electricity.

4. The proposed project will not, for any reason, cause a substantial, adverse effect upon the property values and general desirability of the neighborhood. The project as designed will not have an adverse effect upon the property values and general desirability of the surrounding properties.

WILLIAMSON ACT:

The property is not currently under a Williamson Act Contract.

GENERAL PLAN CONSISTENCY:

The subject property is designated AE (Agricultural Exclusive) by the General Plan. The property is zoned ARE-40 (Agricultural, Rural, Exclusive -40 Acre District). The zone district is consistent with the general plan designation of AE which allows for various public and quasi-public uses. In addition, the project is consistent with General Plan Policy Goal 3.J to provide "efficient and cost-effective utilities."

RECOMMENDATION:

Staff recommends approval of Conditional Use Permit (CUP #2022-013) subject to conditions, Mitigated Negative Declaration #2022-14, Mitigation Monitoring Program, Findings of Fact, and associated Resolution.

CONDITIONS:

See attachments

ATTACHMENTS:

1. Exhibit A. General Plan Map
2. Exhibit B. Zoning Map
3. Exhibit C. Assessor's Map
4. Exhibit D. Enlarged Site Plan Phase I & 2
5. Exhibit D-1. Structural Details
6. Exhibit D-2. Site Plan Phase I
7. Exhibit D-3. Site Plan Phase II
5. Exhibit E. Aerial Map
6. Exhibit F. Topographical Map
7. Exhibit G. Operational Statement
8. Exhibit H. Health and Safety Report
9. Exhibit I. Biological Resources Assessment
10. Exhibit J. Glare Study
11. Exhibit K. FAA Determination of No Hazard
12. Exhibit L. Environmental Health Comments
13. Exhibit M. Public Works Comments
14. Exhibit N. Fire Marshal Comments
15. Exhibit O. Caltrans Comments
16. Exhibit P. Initial Study
17. Exhibit Q. Mitigated Negative Declaration

CONDITIONS OF APPROVAL

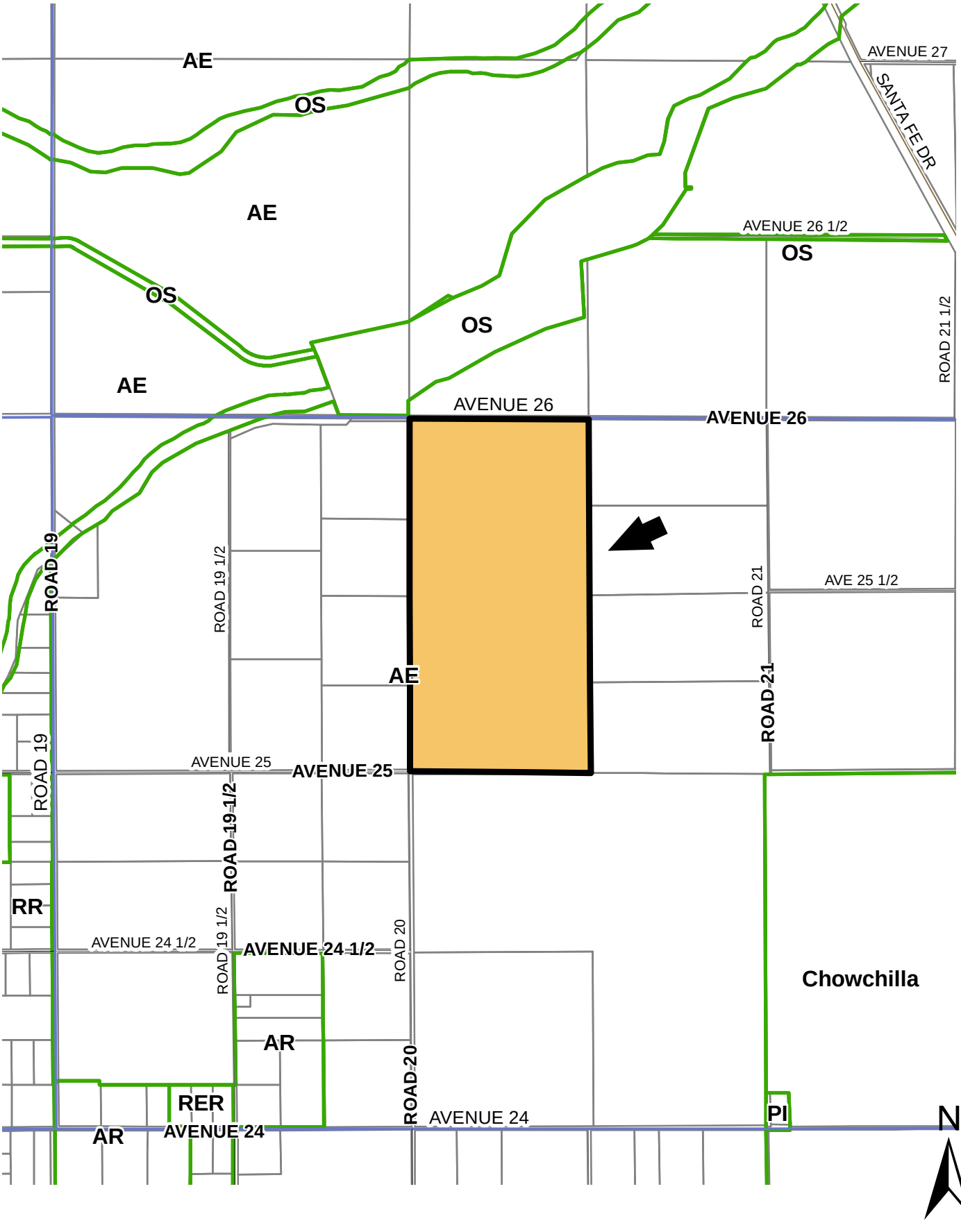
PROJECT NAME:	Conditional Use Permit #2022-013 RPCA Solar 1 LLC
PROJECT LOCATION:	On the south side of Avenue 26 approximately 3/4 mile west of its intersection with Road 21 (no situs) Chowchilla.
PROJECT DESCRIPTION:	Request for a conditional use permit to construct an approximately 8MWac solar photo-voltaic energy generating facility on approximately 46-acres of a 319-acre parcel. The Project will be constructed in two phases and will interconnect to a PG&E preexisting electrical distribution system.

APPLICANT:	RPCA Solar 1 LLC - Brian Smith 302-650-9952
CONTACT PERSON/TELEPHONE NUMBER:	Annette Kephart - Madera County Planning (559) 675-7821

No.	Condition	Department/Agency	Verification of Compliance		
			Initials	Date	Remarks
Environmental Health Division					
1	Maintain all Local and State setback requirements as it relates to municipal or private water and wastewater services.				
2	The construction and then ongoing operation must be done in a manner that shall not allow any type of public nuisance(s) to occur including but not limited to the following nuisance(s); Dust, Odor(s), Noise(s), Lighting, Vector(s) or Litter. This must be accomplished under accepted and approved Best Management Practices (BMP) and as required by the County General Plan, County Ordinances and any other related State and/or Federal jurisdiction.				
Fire Marshall Division					
1	20 foot wide all-weather vehicle access shall be provided within 150 feet of all portions of the project.				
2	A KNOX box entry device shall be installed in conjunction with all gated access.				
3	All proposed gated openings shall be 2 feet wider than the travel way.				
Planning Division					
1	Facility to operate in accordance with submitted Operational Statement and plans unless otherwise modified by conditions of approval and CEQA mitigation measures.				
2	Lighting associated with this project is to be hooded and directed downward and away from adjoining parcels.				
3	All circulation areas within the project area shall be paved or surfaced with an approved material to reduce dust generation.				
Public Works Department					
1	At the time of applying for the building permits, if any grading is to occur, the applicant is required to submit a grading, drainage, and erosion control plans to the Public Works Department for review. Such improvement plans shall be prepared by a licensed professional.				
2	Contractor and Owner are responsible to ensure that the proper BMPs and erosion control measures are in place. Sediment is not allowed to leave the site during construction.				

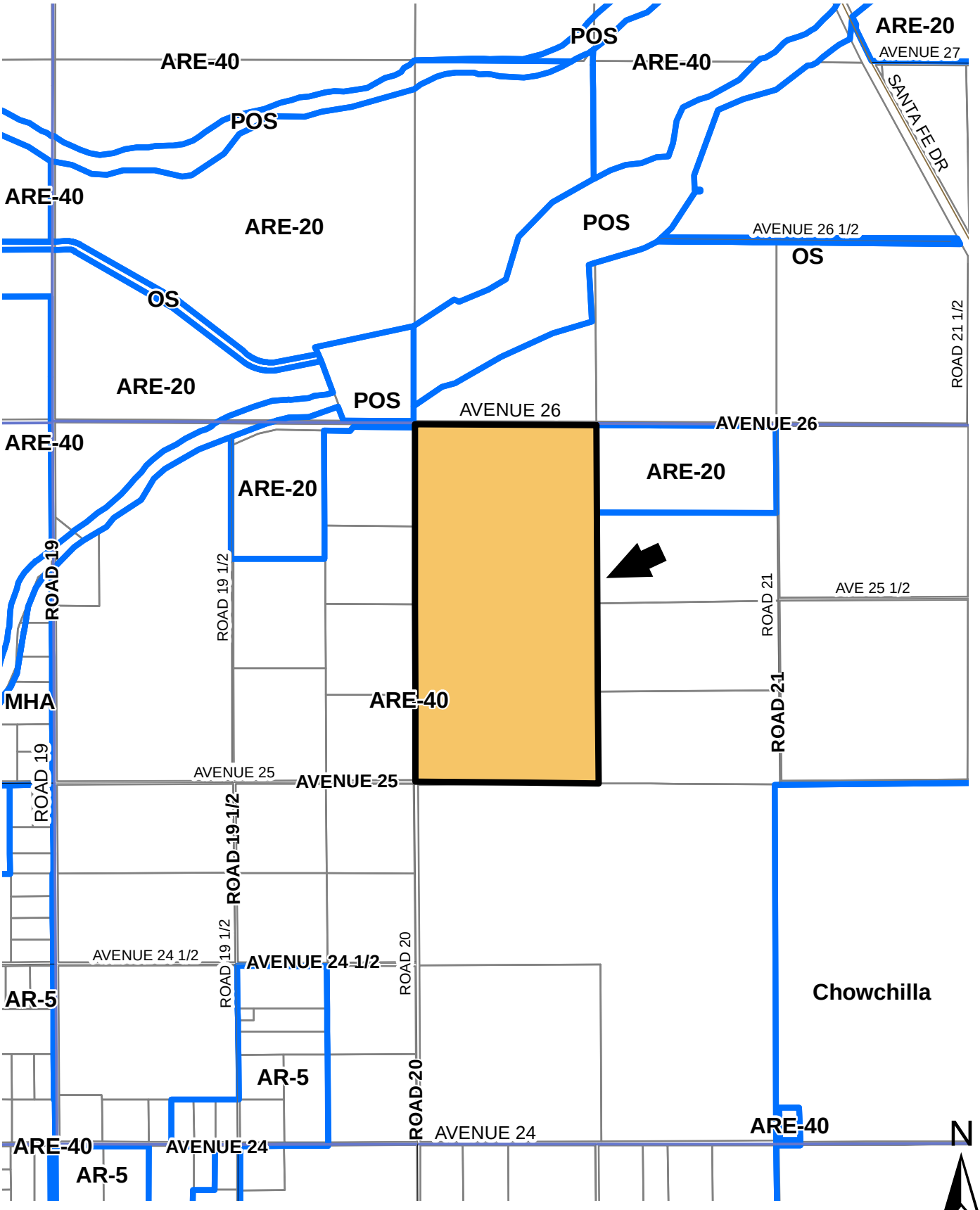
No.	Condition	Department/Agency	Verification of Compliance		
			Initials	Date	Remarks
3	The contractor and owner will be responsible for any damage caused by runoff from construction site that is not permitted.				
4	All National Pollution Discharge Elimination System (NPDES) storm water regulations and standards shall be met. It is possible that the quality of storm water may be affected by pollutants. The applicant shall mitigate any impacts associated with storm water contamination caused by this project. A Storm Water Pollution Prevention Plan (SWPPP) is required for all projects 1-acre or more of site disturbance.				
5	Contractor shall be responsible for locating all underground utilities prior to the start of any work by contacting Underground Service Alert (USA) 48 hours prior to any excavation at 1-800-227-2600 Contractor shall be responsible for contacting the appropriate party in advance of any work for necessary inspections in compliance to these plans, standard plans and standard specifications.				
6	The easterly property line of the subject parcel aligns with road 20.5 roadway alignment to the south. Road 20.5 is designated as a Minor road with a 60-foot road right of way (30 feet on each side of the road centerline). It is asked that the 30 feet along the easterly property line be dedicated/reserved as an easement for future public road access.				
7	Prior to any construction where such construction takes place within an existing public right-of-way, the developer is required to apply for an Encroachment Permit from the Public Works Department. Said permit must be approved prior to commencing the work.				
8	All proposed driveway approaches must be designed per county standard ST-24B for commercial use unless approved otherwise. Such approaches will be inspected by the Public Works inspector.				
9	Except as approved and permitted by the County, all appurtenances, such as fences along with private signs, shall be located outside of the public road right-of-way.				
10	No mud and/or debris shall be tracked onto public roads.				
11	No construction equipment or vehicles of any kind be allowed to blocking the flow of traffics or causing any sight distances/safety hazards to the general public within the area of work				
12	The applicant or his contractors will be responsible for any damages to the road during the construction of the facility, including but not limited to, existing pavement or neighboring properties.				

EXHIBIT A



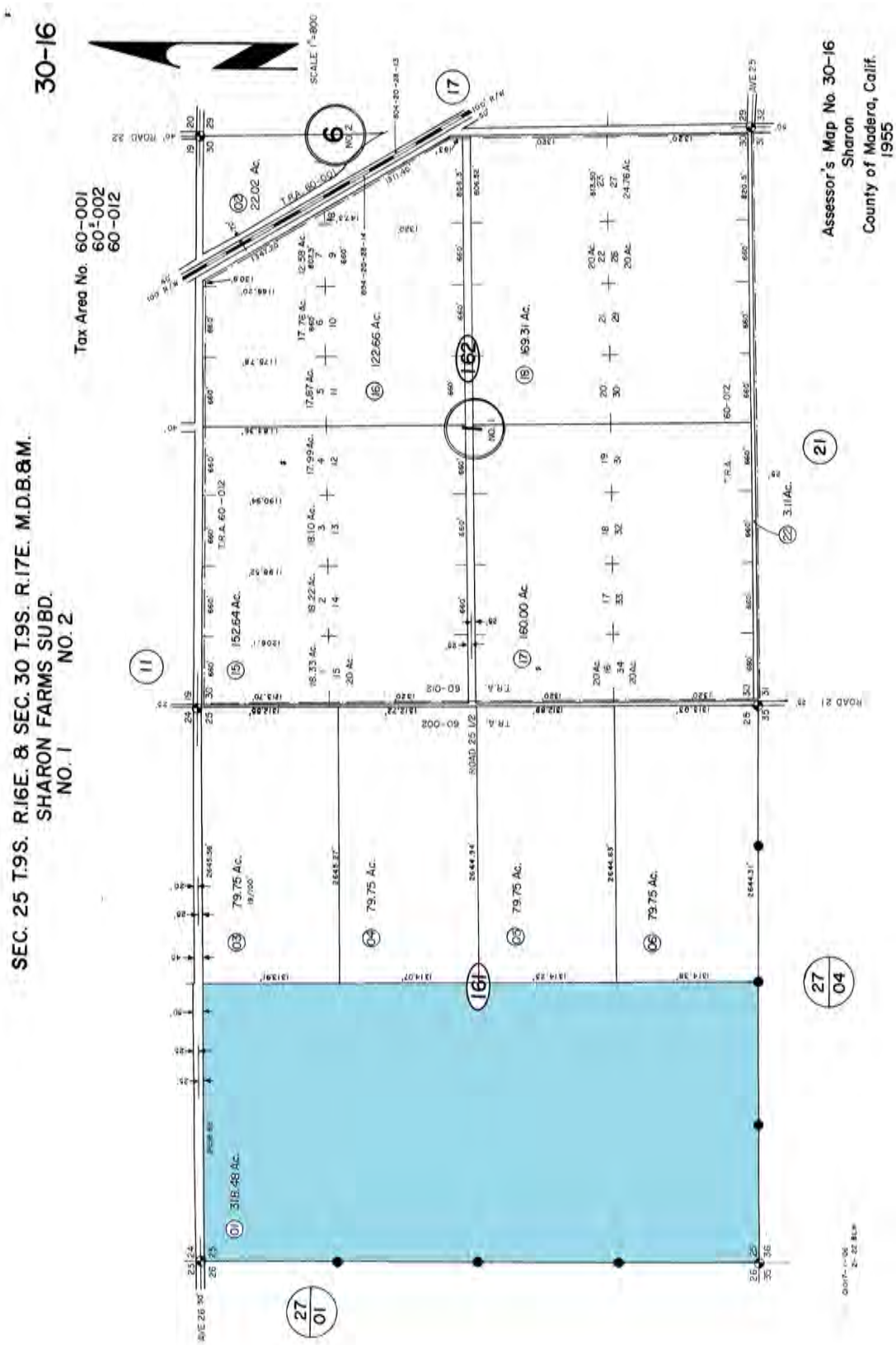
GENERAL PLAN MAP

EXHIBIT B



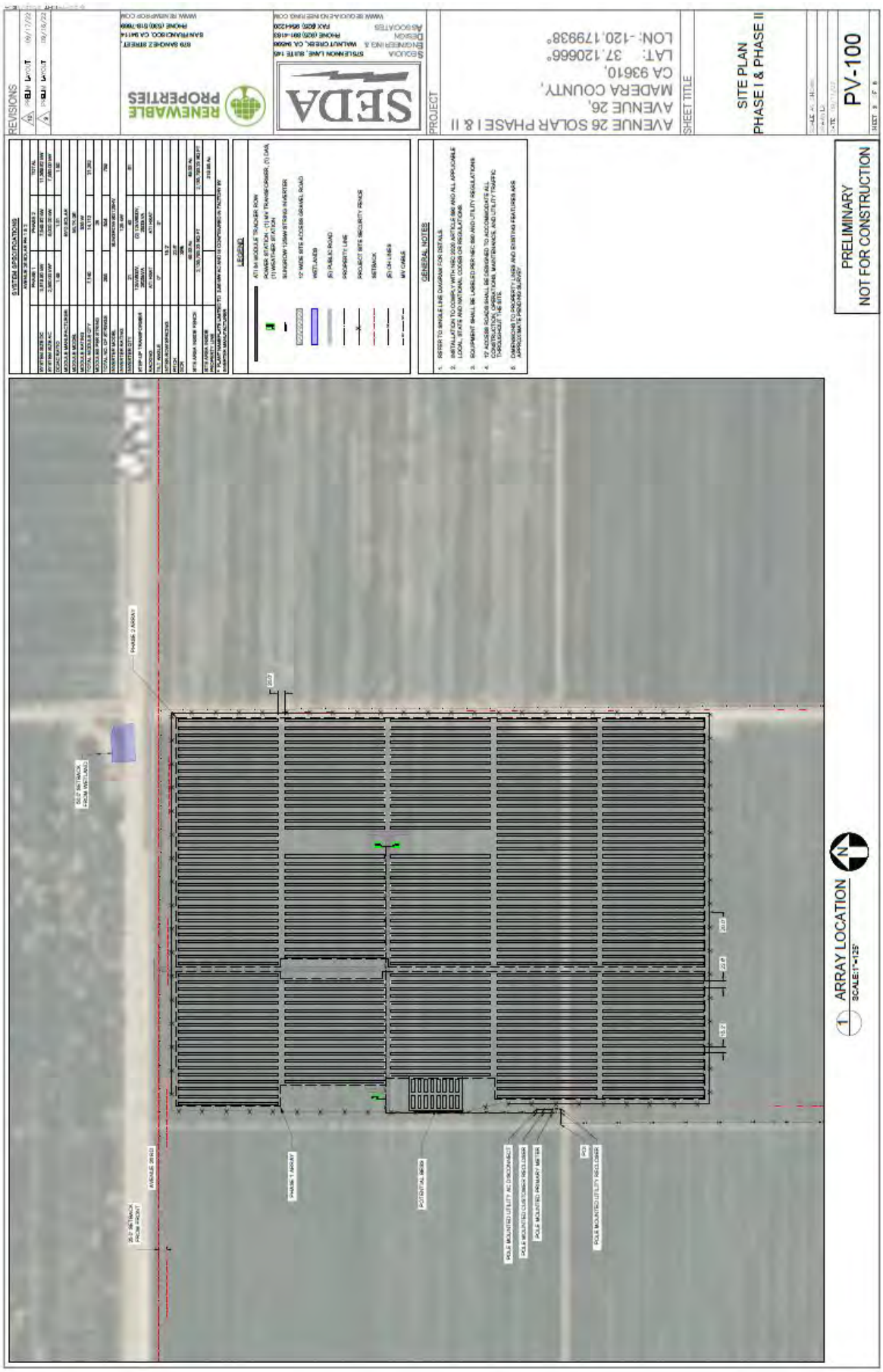
ZONING MAP

EXHIBIT C



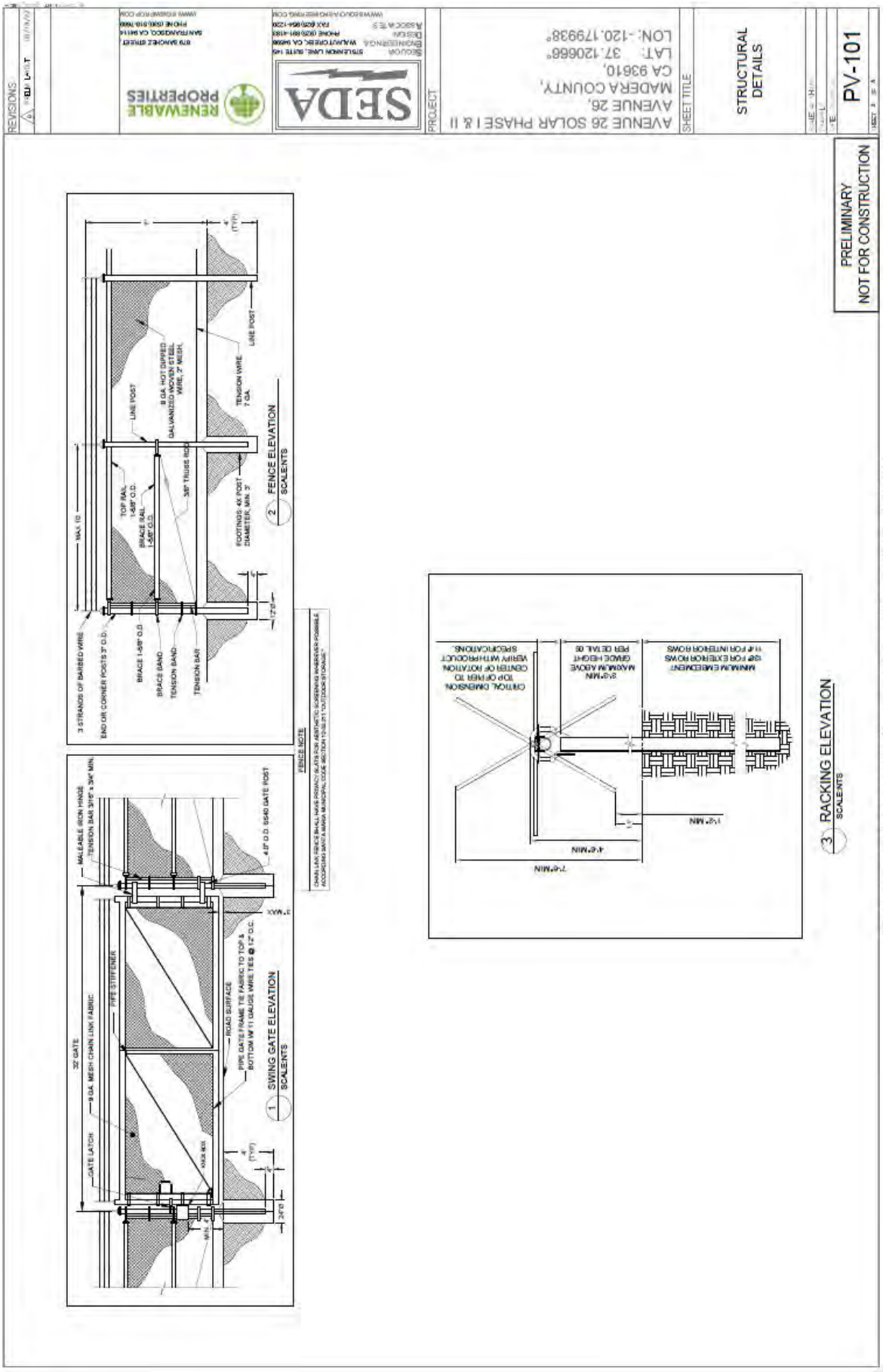
ASSESSOR'S MAP

EXHIBIT D



ENLARGED SITE PLAN PHASE I & II

EXHIBIT D-1



STRUCTURAL DETAILS

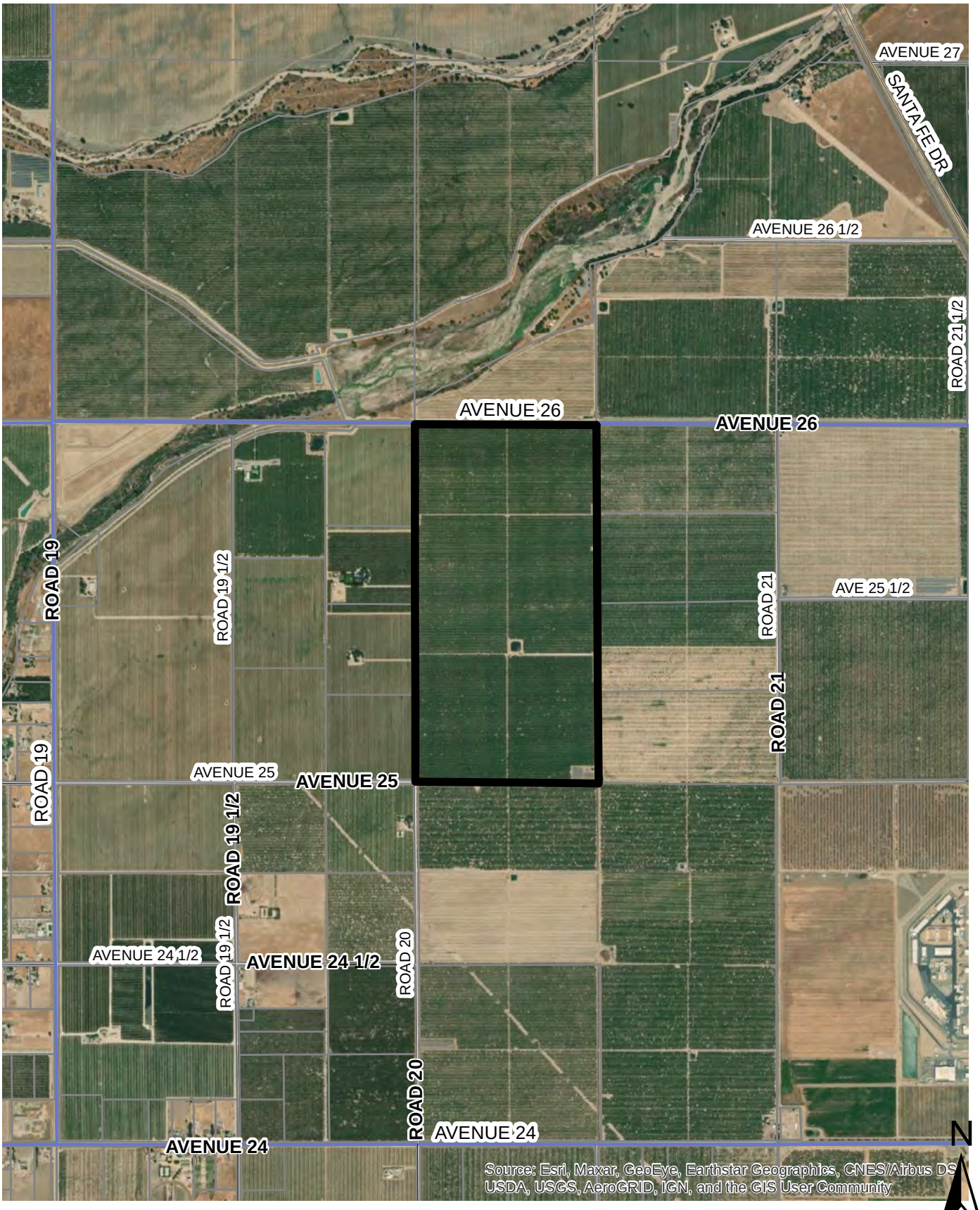
EXHIBIT D-2

SITE PLAN PHASE I

EXHIBIT D-3

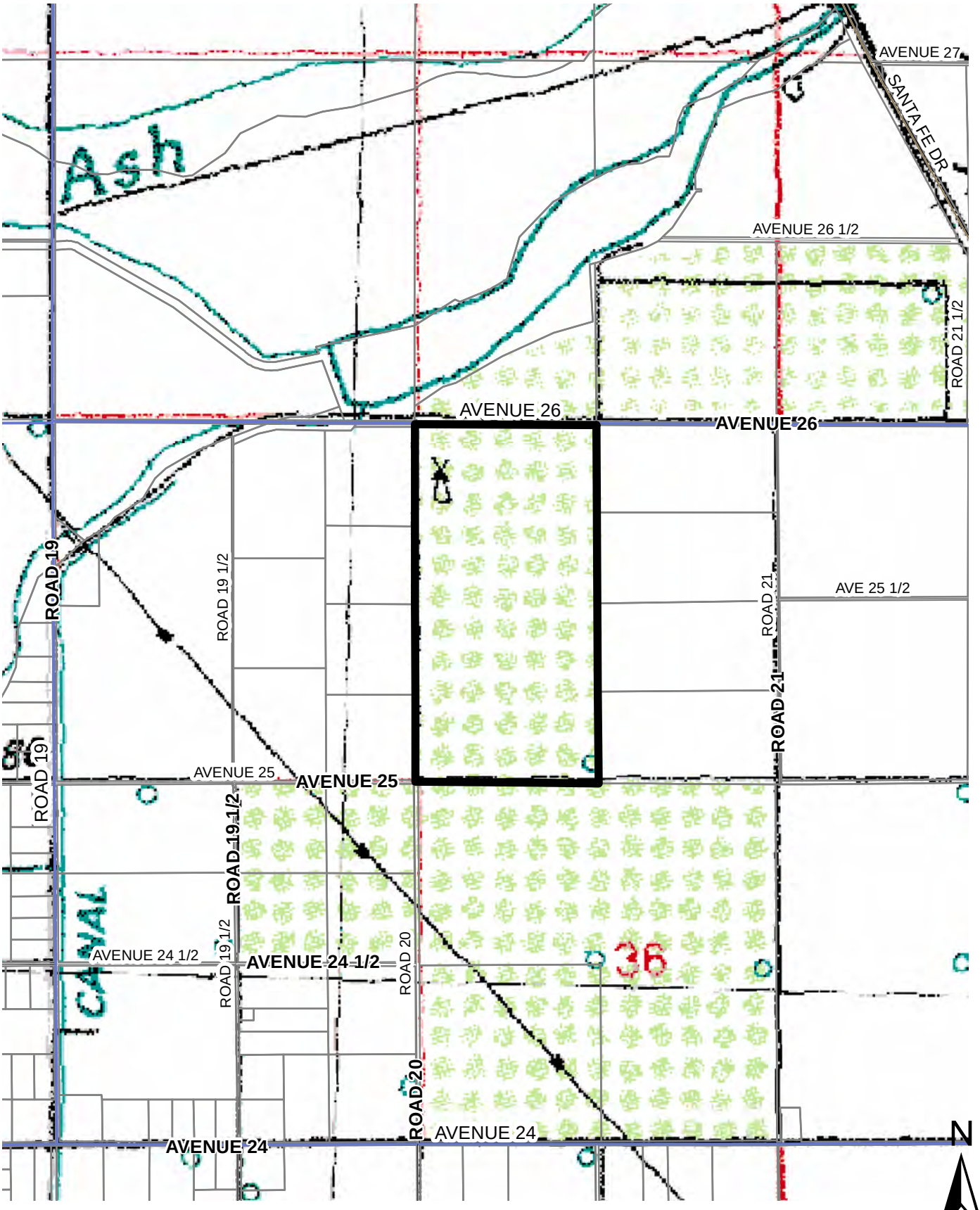
SITE PLAN PHASE II

EXHIBIT E



AERIAL MAP

EXHIBIT F



TOPOGRAPHICAL MAP

Community and Economic Development
Planning Division

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OPERATIONAL/ENVIRONMENTAL STATEMENT CHECKLIST

It is important that the operational/environmental statement provides for a complete understanding of your project proposal. Please be as detailed as possible.

1. Please provide the following information:

Assessor's Parcel Number: 030-161-001-000

Applicant's Name: RPCA Solar 1 LLC

Address: 879 Sanchez St, San Francisco, CA 94114

Phone Number: Stephanie Loucas 678-894-5639 or Brian Smith 302-650-9952

2. Describe the nature of your proposal/operation.

To develop and construct an approximately 8MWac solar photo-voltaic energy generating facility on approximately 46-acres of a 319 acre parcel. The Project will be constructed in two phases and situated along Ave 26 between Roads 20 and Rd 21 just east of the City of Chowchilla. The Project will interconnect to PG&E preexisting electrical distribution system.

3. What is the existing use of the property?

The existing use of the property is Agricultural (almond production).

4. What products will be produced by the operation? Will they be produced onsite or at some other location? Are these products to be sold onsite?

Electricity will be generated by the equipment onsite and sold to PG&E.

5. What are the proposed operational time limits?

Months (if seasonal): N/A - Operational during daylight hours, the system only operates when the sun shines with minimal human intervention.

Days per week:

Hours (from____to _): Total Hours per day:

6. How many customers or visitors are expected?

Average number per day: None

Maximum number per day: N/A

What hours will customers/visitors be there? N/A

7. How many employees will there be?

Current: During construction, up to 50 workers may be employed at the site

Future: During operations, typically two (but up to 4) members of the Operations and Maintenance (O&M) team on an as needed basis.

Hours they work: 7AM - 7 PM

Do any live onsite? If so, in what capacity (i.e. caretaker)? No

8. What equipment, materials, or supplies will be used and how will they be stored? If appropriate, provide pictures or brochures.

Steel posts, solar panels, racking, solar inverters, electrical cabling and equipment, and interconnection equipment--see site plan.

The equipment is installed immediately after being delivered and held temporarily in an on-site lay down area.

9. Will there be any service and delivery vehicles? There will be a small increase in vehicle trips generated during construction. Once operational, the site will be accessed infrequently.

Number: The delivery vehicles will be staggered as equipment is delivered and at the most will be approximately 40 vehicles over the peak construction period which is expected to last for a few weeks.

Type: Varies, nothing larger than tractor-trailer trucks.

Frequency: Construction is expected to last approximately four months with peak activity only lasting a few month in the middle of the construction timeline.

10. Number of parking spaces for employees, customers, and service/delivery vehicles. Type of surfacing on parking area.

During operations, there will be infrequent visits (approx four) to the site by the O&M crew and dedicated parking is not warranted.

11. How will access be provided to the property/project? (street name)

A 12 foot access aisle will be installed off Avenue 26 to access the site.

12. Estimate the number and type (i.e. cars or trucks) of vehicular trips per day that will be generated by the proposed development.

Once constructed, two pick-up trucks will visit the site at least bi-annually for panel cleaning and as needed to service the equipment.

13. Describe any proposed advertising, inlcuding size, appearance, and placement.

None

14. Will existing buildings be used or will new buildings be constructed? Indicate which building(s) or portion(s) of will be utilized and describe the type of construction materials, height, color, etc. Provide floor plan and elevations, if applicable.

No building exists or will be constructed.

15. Is there any landscaping or fencing proposed? Describe type and location.

There will be an 6 foot chain link fence with one foot of barbed wire on top.

16. What are the surrounding land uses to the north, south, east and west property boundaries?

Agricultural land.

17. Will this operation or equipment used, generate noise above other existing parcels in the area?

The noise generated by the power conversion devices and transformers is minimal, it will not increase above an ambient level outside the Project fence line.

While this equipment will generate minimal noise, it will not be noticeable above background levels when standing outside the fence line of the project.

18. On a daily or annual basis, estimate how much water will be used by the proposed development, and how is water to be supplied to the proposed development (please be specific).

The project is a low-impact development and does not require municipal water, groundwater, or sewer service. The water for panel-cleaning will be trucked in as needed.

19. On a daily or weekly basis, how much wastewater will be generated by the proposed project and how will it be disposed of?

None

20. On a daily or weekly basis, how much solid waste (garbage) will be generated by the proposed project and how will it be disposed of?

During construction, minimal waste will be generated, the majority will come from packaging and will be recycled when possible.

During operation, no waste will be generated.

21. Will there be any grading? Tree removal? (please state the purpose, i.e. for building pads, roads, drainage, etc.)

The Project site is already relatively flat and planted for almond production. Only cultivated trees will be removed for this project.

22. Are there any archeological or historically significant sits located on this property? If so, describe and show location on site plan.

No, not that we are aware of currently.

23. Locate and show all bodies of water on application plot plan or attached map.

No bodies of water exist on the Project site. The Project has been designed to avoid the wetlands that fall outside of the Project site.

24. Show any ravines, gullies, and natural drainage courses on the property on the plot plan.

N/A

25. Will hazardous materials or waste be produced as part of this project? If so, how will they be shipped or disposed of?

No

26. Will your proposal require use of any public services or facilities? (i.e. schools, parks, fire and police protection or special districts?)

No

27. How do you see this development impacting the surrounding area?

The installation of a small-scale utility solar farm converts sunshine into clean renewable energy for the community. The Project is a low impact design and based on the current use of the property for agriculture, no impacts to protected wildlife or habitat is anticipated.

28. How do you see this development impacting schools, parks, fire and police protection or special districts?

No impact

29. If your proposal is for commercial or industrial development, please complete the following; Proposed Use(s): Ground mounted solar photovoltaic generating facility

Square feet of building area(s): 2,113,288 square feet

Total number of employees: During construction up to 50 workers and during operations up to four workers for bi-annual cleaning and as needed when service to equipment is needed.

Building Heights: When at maximum tilt, the panels will be no more than 15 feet above ground level.

30. If your proposal is for a land division(s), show any slopes over 10% on the map or on an attached map.

N/A

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Technical Memorandum

To: Brian Smith, RPCA Solar 1

From: Stephen Barrett

Date: July 11, 2022

RE: Health and Safety Report, Avenue 26 Solar, Madera County California

Overview

RPCA Solar 1 LLC (RPCA Solar 1) is developing the Avenue 26 Solar Project (Project or Proposed Project), a solar photovoltaic (PV) energy generating facility on private land in Madera County, California east of the City of Chowchilla. RPCA Solar 1 has engaged Barrett Energy Resources Group (BERG) to provide a Health and Safety Report to summarize the potential impacts of the Proposed Project.

This report uses publicly available technical sources to address the potential health and safety impacts of solar photovoltaic facilities like the one proposed by RPCA Solar 1. It provides an independent assessment of issues including hazardous materials, electric and magnetic fields (EMF), arc flash, and fire safety. It is supported by government and academic studies of these issues to present a credible assessment in response to questions that may be raised in public fora. A list of sources is provided at the end of this report.

As supported by the literature, it is concluded that (1) components of photovoltaic (PV) systems undergo rigorous safety and reliability testing protocols during manufacturing and fulfill the electrical safety requirements established by various codes and standards; and (2) solar PV systems do not pose health, safety, or environmental risks under normal operating conditions if properly installed and maintained by trained personnel as required by electrical codes (NC Clean Energy Technology Center 2017, Namikawa et al. 2017). The following report summarizes the four health and safety issues.

Hazardous Materials

Solar PV modules are comprised of silicon-based cells that generate energy, encased in tempered glass and aluminum framing. These materials are nonhazardous. The tempered glass and framing provide protection of the more sensitive components and limit potential exposure pathways during normal operation.

Analysis on solar panels in the marketplace has indicated that different varieties of solar panels have different metals present in the semiconductor and solder which make up very small portions of each module (NC Clean Energy Technology Center 2017). Some of these metals, like lead and cadmium, can be harmful to human health and the environment at high levels and

could be regulated as hazardous waste under the Federal Resource Conservation and Recovery Act (RCRA) and California's more stringent Hazard Waste Control Law during decommissioning. Lead is a very minor component in some silicon-based solar panels, which are the most common panel type. It may be found in the glass etching and in soldering though some lead-free options have also been adopted. Notwithstanding, the literature shows that the potential for human health exposure from lead and other metals in solar panels is low.

One study has assessed the potential human health effects from broken panels during project operations (Sinha et al. 2019). It concluded that exposure point concentrations of lead in utility-scale systems are below US Environmental Protection Agency (EPA) health screening values in soil, air, and groundwater for both the single point estimates and Monte Carlo uncertainty simulation.[1] In practice, exposure from broken panels is very unlikely due to the rigorous design standards of manufacturers and agencies that enforce engineering and building codes. Construction practices, which physically bind PV modules to racking and other components, further reduces potential exposure from broken panels.

A more recent study assessed the potential human health effects of disposing of solar panels in landfills (Sinha et al 2020). It concluded that cancer risks and non-cancer hazards for lead from silicon-based modules are at least an order of magnitude below U.S. regulatory thresholds. They are also lower than World Health Organization (WHO) thresholds.

The remaining system components, such as the racking, inverters, and transformers, do not contain hazardous materials. While the transformers may include cooling oils, the formulations are based on nontoxic mineral oils. Inverters and transformers are also built as weather-proof enclosures further reducing potential for exposure.

Nearly 100 percent of the materials in a solar panel, including those metals identified as a potentially hazardous waste, are recyclable or reusable. In recognition of the low potential for concentration and high potential for recycling and reuse, the State of California enacted the Hazard Waste Control Law in January 2021 which allows decommissioned solar panels to be disposed of as universal wastes (Rischar 2020). The rule makes it less expensive and burdensome to collect, process and recycle solar panels improving options for end-of-life use. While current levels of solar module recycling are limited, domestic recycling efforts are expected to expand as the supply of decommissioned panels increases and opportunities to process those panels advance (Curtis et al 2021).

[1] Monte Carlo simulation performs risk analysis by building models of possible results by substituting a range of values—a probability distribution—for any factor that has inherent uncertainty. It then calculates results over and over, each time using a different set of random values from the probability functions.

EMF

Sources of electric and magnetic fields (EMF) from a solar PV facility include Direct Current (DC) magnetic fields from the solar panels and from the cables connecting the solar arrays to the power inverters, as well as Alternating Current (AC) fields from the power inverters and the existing distribution and transmission lines that are points of interconnect.

Reviews of the research on EMF and human health conducted by scientific and health organizations have been consistent in their overall conclusions that long-term exposure to EMF at the levels experienced in our everyday environment has not been shown to cause or contribute to adverse health effects in adults or children (Exponent 2020).

One study characterized magnetic and electric fields between the frequencies of 0 Hz and 3 GHz at two solar PV facilities operated by the Southern California Edison Company in Porterville, CA and San Bernardino, CA (Tell et al 2015). Static magnetic fields were very small compared to exposure limits established by the Institute of Electrical and Electronic Engineers (IEEE) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP). The highest 60-Hz magnetic fields were measured adjacent to transformers and inverters, and radiofrequency fields from 5–100 kHz were associated with the inverters. The fields measured complied in every case with IEEE controlled and ICNIRP occupational exposure limits. In all cases, electric fields were negligible compared to IEEE and ICNIRP limits across the spectrum measured and when compared to the FCC limits (≥0.3 MHz) and rapidly dissipated over any distance.

Arc Flash / Electric Shock

Arc flash events are a serious safety concern for all electrical systems, including solar PV. Arc flashes occur during an arc fault, when a short circuit is present that results in electrical current passing across an air gap. Arc flashes are the high levels of energy, heat, and light that can be released during an arc fault. Arc flashes can result in serious injury or death to persons near the incident area. For solar PV, the most common places where arc fault risk can occur is between DC wiring within the array, at the DC combiner when opening and closing fuses, at the switchgear opening and closing fuses, as well as opening cabinets (Zapotec 2022).

Common causes of arc faults include:

- Human Error – unsafe work procedures, maintenance errors, mishandling tools, and overall lack of authorized procedures.
- Negligent Preventive Maintenance – persistent loose terminations, conductive soot, dust, and debris build-up in medium and high voltage networks.

- Improper Electrical Equipment Systems – incorrect modifications, legacy equipment that does not conform with modern arc fault standards.

PV solar projects are designed in accordance with National Electric Code (NEC) requirements including perimeter fencing to restrict access and hazard signage to warn the local community about electrical equipment. Designing projects to meet national standards significantly limits potential impacts of electric shock. Additional measures are necessary to protect workers performing corrective and preventative maintenance on the systems from injury.

Design, installation, and maintenance procedures have been standardized which significantly reduce the risk of electric shock. Best practices for minimizing these hazards have been summarized in international guidance (Namikawa et al. 2017). NREL has compiled data and methods for evaluating DC arc flash that is comparable to IEEE 5184 for AC systems (Sekulic et al. 2021). An arc flash study is commonly prepared for solar PV projects prior to construction to establish the arc flash boundary for the facility and the areas where maintenance workers must wear personal protective equipment (PPE) (McNutt et al. 2018).

Arc flash PPE needs to follow the direction from NFPA 70E. This typically consists of protection for the face and eyes as well as the upper and lower body that is of sufficient energy rating to protect the worker for the calculated incident energy levels. These hazards exist throughout the total operational lifetime of the PV array system. Workers should never work alone in array fields. To reduce the DC arc flash potential during routine maintenance, PV systems should be shut down early in the morning or later in the evening (McNutt et al. 2018).

Fire Risk

Most of the materials that comprise a solar PV system are not flammable. Those that are potentially flammable include the thin layers of polymer encapsulates surrounding the PV cells, polymer backsheets (framed panels only), plastic junction boxes on the rear of panel, and insulation on wiring. Solar modules are primarily composed of non-flammable components, as one or two layers of protective glass make up over three quarters of the panel's weight. Should a flammable component of the PV system combust, there is a low risk for a sustained fire particularly for a ground-mounted facility due to the lack of overall flammable material. Primary risks of fire are related to fire fighter safety.

Fire risk and hazards to fire fighters are significantly greater and more complex for building-mounted solar PV installations than for ground-mounted facilities (Namikawa et al. 2017). As solar PV deployments have become commonplace, codes and standards agencies have worked with the fire services and the solar PV industry to develop guidelines to address the potential hazards to firefighters working near energized PV systems. As of 2016, a substantial body of

best practices has been established for PV system design, installation, and firefighter operations.

While PV system components have a low risk of flammability, studies have been conducted to assess the potential human health impacts from burning and combusted materials (Sinha et al. 2018). The primary study conducted by the International Energy Agency concluded that:

- Potential lead inhalation exposures silicon fire-affected PV modules are below acute exposure guideline levels and cancer risk screening thresholds; and
- Potential impacts to soil and groundwater from lead emissions from silicon fire-affected PV modules are below risk-based screening levels and maximum contaminant levels

Conclusion

The solar PV industry is a mature worldwide business that operates to minimize financial risk to investors and limit potential health and safety impacts to the public. The industry has established rigorous safety and reliability testing protocols during manufacturing of system components and fulfilled the electrical safety requirements established by various codes and standards. The literature demonstrates that solar PV systems do not pose health, safety, or environmental risks under normal operating conditions if properly installed and maintained by trained personnel as required by electrical codes. Furthermore, risks are greatest for personnel called in to operate, maintain, and respond to emergencies in the facilities, and procedures have been established to protect these frontline workers. For additional information on potential health and safety risks of solar PV facilities, please refer to the cited resources.

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EXHIBIT I

RPCA AVENUE 26 SOLAR PROJECT, BIOLOGICAL RESOURCES ASSESSMENT

MADERA COUNTY, CALIFORNIA

JULY 2022

Prepared for:

Stephanie Loucas
VP, Development
Renewable Properties, RPCA Solar 1, LLC

RPCA Avenue 26 Solar Project
Biological Resources Assessment

Madera County, California

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May 2022
Project No.: 20230083.001A

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SUMMARY

The proposed RPCA Avenue 26 Solar Project (Project) involves construction of a small-scale utility solar generation facility, located just east of the City of Chowchilla in unincorporated Madera County, California (Figure 1). In April of 2022, Kleinfelder biologist Lisa Achter conducted a desktop review of the vicinity of the Project Area (Figure 2) and performed a field verification survey of the Project Area. The intention of the field verification survey was to identify and characterize existing on-site biological resources and determine the potential for special status species and/or sensitive habitats (as defined by state and federal resource agencies) to occur on the site.

The field survey focused on the approximate 319.95-acre parcel (Project Area), of which 45.56 acres would be developed under the proposed Project (Project Site). Based on the results of the desktop review and field verification survey, one special-status wildlife species, monarch (*Danaus plexippus*), and no special-status plant species were determined to have a moderate or higher potential to occur within the Project Area.

This report serves to document the methods and results of the April 2022 biological field survey, describes potential biological resource constraints associated with construction of a solar facility at the site, and provides recommendations to address these constraints.

1. INTRODUCTION

1.1. BACKGROUND AND PROJECT DESCRIPTION

The proposed RPCA Avenue 26 Solar Project is a small-scale utility solar generation facility to be located on approximately 45.56 acres of a 319.95-acre parcel (APN 030-161-001-000) of land east of Chowchilla, California (Figure 2). Wildcat Renewables, LLC has entered into a long-term lease agreement with the property owner (Gary and Roger Schuch) to facilitate the development and operation of the Project.

The Project will be constructed in two phases and, once operational, generate a combined total of 8 megawatts (MW) alternating current (AC) (12 MW direct current [DC]) of clean, reliable solar energy. Phase one of the Project is designed as a 3 MW (AC) tracker system situated on approximately 19.11 acres and accessed from Avenue 26. Phase two of the Project is designed as a 5 MW (AC) tracker system situated on approximately 29.40 acres and it will be accessed similarly as Phase one. Phase one and Phase two of the Project will interconnect to Pacific Gas and Electric Company's (PG&E's) pre-existing on-site electrical distribution system. The combined power generated from this facility will be sold to PG&E through a long-term Power Purchase Agreement (PPA). Additionally, the Project will be equipped with energy storage technology that will allow on site renewable energy generation to be stored and dispatched onto the grid when needed.

Once operational, the Project will use approximately 22,221 solar modules and 64 string inverters to convert the sun's energy into usable AC power. Single-axis tracking technology will be utilized to allow the modules to efficiently track the sun throughout the day and maximize the efficiency of solar collection. The modules will be mounted on a steel racking system, which will be anchored into the ground using driven steel piers. The overall height of the array will be no more than 15-feet tall.

1.2. OBJECTIVES

The purpose of this analysis is to evaluate the Project Area to assess the potential for special-status plant and wildlife species and sensitive natural communities to occur, and the potential effects to these biological resources due to construction and operation of the Project. This assessment provides the methods and results of the field survey, including vegetation communities and land cover types present within the Project Area, special-status plant and wildlife species detected or with potential to occur within the Project Area, the presence of wildlife movement corridors or federally designated Critical Habitat within or adjacent to the Project Area, and any additional focused surveys necessary to further evaluate potential impacts to biological resources that could occur within the Project Area. Recommendations to avoid and minimize impacts to these resources are provided in Section 5 of this document.

1.3. PROJECT LOCATION

The approximate 319.95-acre parcel is located at the intersection of Road 20 and Avenue 26, approximately 3.75 miles east of Chowchilla in Madera County, California (Figure 2). The Project Area occurs within one parcel that is surrounded by agriculture, consisting of orchards to the north, east, and south, and a vineyard to the west. The parcel is located at an elevation of approximately 270-280 feet above mean sea level, and adjacent land uses are primarily agriculture, with some rural residences scattered among farms. No structures are located on the parcel; however, two small solar arrays occur on the eastern and southeastern boundaries of the parcel (Figure 2).

The Project Area is situated within Township 9 South, Range 16 East, and Section 25 of the Le Grand and Berenda 7.5-minute U.S. Geological Survey (USGS) quadrangles. The corresponding latitude and longitude at the approximate center of the Project Area is 37°07'05" north latitude and 120°10'35" west longitude.

2. REGULATORY SETTING

2.1. FEDERAL

Federal Endangered Species Act (FESA)

The FESA prohibits the taking, possession, sale or transport of endangered species. Pursuant to the requirements of FESA, a federal agency reviewing a project within its jurisdiction must determine whether any federally listed threatened or endangered species could be present in the project site and determine the extent to which the project will have an effect on such species. In addition, federal agencies are required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat designated for such species (16 USC 1536[3], [4]). Projects that would result in "take" of any federally-listed threatened or endangered species are required to obtain authorization from the National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service (USFWS) through either Section 7 (interagency consultation) or section 10(a) (incidental take permit) of FESA, depending on whether the federal government is involved in permitting or funding the project.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50 Code of Federal Regulations (CFR) Section 10.13. The MBTA is an international treaty for the conservation and management of bird species that migrate through more than one country, and is enforced in the United States by the USFWS. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50 CFR 20. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors).

Federal Clean Water Act (Section 404)

The objective of the Clean Water Act (CWA) is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Under Section 404 of the CWA, the U.S. Army Corps of Engineers (ACOE) has the authority to regulate activities that could discharge fill or dredge material or otherwise adversely modify wetlands or other waters of the United States. The ACOE implements the federal policy embodied in Executive Order 11990, which, when implemented, is intended to result in no net loss of wetland values or function.

Federal Clean Water Act (Section 401)

The State Water Resources Control Board (SWRCB) has authority over wetlands through Section 401 of the CWA, as well as the Porter-Cologne Act, California Code of Regulations Section 3831(k), and California Wetlands Conservation Policy. The CWA requires that an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) first obtain certification from the appropriate state agency

stating that the fill is consistent with the State's water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the SWRCB to the nine regional boards. The Regional Water Quality Control Board (RWQCB) has authority for Section 401 compliance in the Project Area. A request for certification is submitted to the regional board at the same time that an application is filed with the ACOE.

2.2. STATE

California Endangered Species Act (CESA)

Under the CESA, the California Fish and Wildlife Commission (CFWC) has the responsibility of maintaining a list of threatened species and endangered species. California Department of Fish and Wildlife (CDFW) also maintains lists of species of special concern. A Species of Special Concern (SSC) is a species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- is extirpated from the State or, in the case of birds, in its primary seasonal or breeding role;
- is listed as Federally-, but not State-, threatened or endangered;
- meets the State definition of threatened or endangered but has not formally been listed;
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

CESA prohibits the take of state-listed animals and plants in most cases, but CDFW may issue incidental take permits under special conditions. Pursuant to the requirements of CESA, a state agency reviewing a project within its jurisdiction must determine whether any state-listed endangered or threatened species could be present on the property and determine whether the project would have a potentially significant impact on such species.

California Fish and Game Code Sections 3503, 3511, 3513, 4150

Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Fish and Game Code Section 3503.5 protects all birds-of-prey (raptors) and their eggs and nests. Section 3511 states fully protected birds or parts thereof may not be taken or possessed at any time. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act. All nongame mammals, including bats, are protected by California Fish and Game Code 4150.

California Fish and Game Code Sections 1600-1616

Under Sections 1600-1616 of the California Fish and Game Code, the CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFW's jurisdiction are defined in the code as the "... bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit ..." (Section 1601). In practice, the CDFW usually marks its jurisdictional limit at the top of the stream or bank, or at the outer edge of the riparian vegetation, whichever is wider.

CDFW Wetlands Protection Regulations

CDFW derives its authority to oversee activities that affect wetlands from state legislation. This authority includes Sections 1600-1616 of the Fish and Game Code (lake and streambed alteration agreements), CESA (protection of state listed species and their habitats - which could include wetlands), and the Keene-Nejedly California Wetlands Preservation Act of 1976 (states a need for an affirmative and sustained public policy program directed at wetlands preservation, restoration, and enhancement). In general, the CDFW asserts authority over wetlands within the state either through review and comment on ACOE Section 404 permits, review and comment on CEQA documents, preservation of state listed species, or through stream and lakebed alteration agreements.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act established the SWRCB and each Regional Water Quality Control Board (RWQCB) as the principal state agencies responsible for the protection of water quality in California. As noted above, the RWQCB has regulatory authority over the Project Area.

The Porter-Cologne Water Quality Control Act provides that, "All discharges of waste into the waters of the State are privileges, not rights." Waters of the State are defined in Section 13050(e) of the Porter-Cologne Water Quality Control Act as "...any surface water or groundwater, including saline waters, within the boundaries of the state." All dischargers are subject to regulation under the Porter Cologne Water Quality Control Act, including both point and nonpoint source dischargers. The RWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction. As noted above, the RWQCB is the appointed authority for Section 401 compliance in the Project Area.

California Environmental Quality Act

Although threatened and endangered species are protected by specific federal and state statutes, California Environmental Quality Act (CEQA) Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals and allows a public agency to undertake a review to determine if a significant effect on a species that has not yet been listed by either the USFWS or CDFW (i.e., species of concern) would occur. Whether a species is rare, threatened, or endangered can be legally significant because, under CEQA Guidelines Section 15065, an agency must find an impact to be significant if a project would "substantially reduce the number or restrict the range of an endangered, rare,

or threatened species." Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

3. METHODS

3.1. DESKTOP REVIEW

Special-status plant and wildlife species present or potentially present within or adjacent to the Project Area were identified through a desktop literature review using the following sources: USFWS Information for Planning and Consultation (IPaC) Trust Resource Report; CDFW California Natural Diversity Database (CNDDB); and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants. Additionally, the Natural Resources Conservation Service (NRCS), Web Soil Survey (WSS) was queried to determine soil types that exist within the boundary of the Project Area (USDA 2022). Because the Project Area is located within two USGS 7.5-minute quadrangles, the CNDDB and CNPS database searches included the 7.5-minute USGS Le Grand and Berenda quadrangles. The IPaC search included the Project Area and a two-mile buffer surrounding the site. Special-status species include those that are considered threatened, endangered, candidate for listing, species of special concern or fully protected by CDFW, or USFWS, or ranked by CNPS. California Rare Plant Rank (CRPR) 1 and 2 plant species were included in the CNPS search. Following a review of these resources, Kleinfelder also reviewed relevant life history information on those species documented as occurring in the region, including habitat type, soils, and elevation preferences.

3.2. DEFINITION OF SPECIAL-STATUS SPECIES

Special-status plant and wildlife species with state and/or federal protections as described under FESA or CESA in Section 2 above are specifically defined below.

3.2.1. SPECIAL-STATUS WILDLIFE SPECIES

Special-status wildlife species include taxa designated as follows:

- Threatened, endangered, or candidate for listing under FESA;
- Threatened, endangered, or rare under the CESA;
- CDFW species of special concern or fully protected species.

3.2.2. SPECIAL-STATUS PLANT SPECIES

Special-status plant species include taxa designated as follows:

- Threatened, endangered, or candidate for listing under the FESA;
- Threatened, endangered, or rare under the CESA;
- Species with CRPRs as described below (CNPS 2021):
  - 1A – Plants presumed extinct in California
  - 1B – Plants considered rare, threatened, or endangered in California and elsewhere
  - 2 – Plants considered rare, threatened, or endangered in California, but more common elsewhere.

3.3. FIELD SURVEYS

A field survey was performed by Kleinfelder biologist Lisa Achter on April 29, 2022, to evaluate botanical and wildlife resources within the Project Area, including habitat suitability for special-status species.

The survey consisted of walking and driving throughout the Project Area to map and characterize vegetation communities and land cover types, collect data on the relative quality of, and potential for existing habitats to support the special-status species identified during the preliminary database and resources review discussed previously, and to identify any other sensitive biological resources present or potentially present within the site. Private property surrounding the Project Area that could not be accessed was observed with and without binoculars. An aerial photograph (Google Earth 2022) and georeferenced mobile map with an overlay of the Project Site boundary was utilized to map the vegetation communities and record any special-status or sensitive biological resources while in the field. Protocol-level surveys for special-status plant and wildlife species were not conducted during this time. However, any incidental observations of such species were documented during the field survey.

Kleinfelder conducted a constraints-level analysis for potentially jurisdictional wetlands and waters based on current and historic aerial photography signatures and field observations. The analysis was based on criteria provided by the following agencies:

- Waters of the U.S., including wetlands, under the jurisdiction of the ACOE, pursuant to Section 404 of the CWA.
- Wetlands and Waters of the State under the jurisdiction of the Regional Water Quality Control Board (RWQCB), pursuant to Section 401 of the CWA and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act).
- Rivers, streams, or lakes under the jurisdiction of CDFW, pursuant to Section 1602 of the California Fish and Game Code.

4. RESULTS

4.1. BIOLOGICAL SETTING

The biological setting surrounding the Project Area is primarily agriculture, with well-spaced rural residences situated within multiple farms. Orchards are present within and adjacent to the northern, eastern, and southern portions of the Project Area; however, the orchard in the upper 1/3 of the Project Area has been uprooted, which is where the Project Site is located. A vineyard has been established along the western boundary of the Project Area.

4.2. EXISTING HABITATS

The Project Site is composed of non-native annual grasses and forbs between rows of uprooted orchard trees; aerial photography shows that uprooting of the orchard occurred within the last year (Google Earth 2022). Prior to that, aerial photography indicates the Project Site had been utilized as an orchard dating back to at least 2009. A discussion of the general characteristics observed within the Project Area during the field survey are presented below.

4.2.1. SOILS

According to the NRCS (USDA 2022), five soil types are present within the Project Area, including: San Joaquin sandy loam, 0 to 3 percent slopes; Ramona sandy loam, 0 to 3 percent slopes; Cometa sandy loams, 3 to 8 percent slopes; Alamo clay, 0 to 1 percent slopes; and, Greenfield sandy loam, moderately deep and deep over hardpan, 0 to 3 percent slopes (Figure 3).

San Joaquin sandy loam is a well-drained, alluvium derived from granite that occurs on the toe slope of terraces and fan remnants. Ramona sandy loam is a well-drained, alluvium derived from granite that is found on backslopes of fan remnants. Cometa sandy loams are well drained, alluvium derived from granite that are found on the toe slope of fan remnants. Alamo clay is a poorly drained, clayey alluvium derived from igneous, metamorphic and sedimentary rock. It is found on the toe slope of fan remnants. Greenfield sandy loam is a well-drained, alluvium derived from igneous, metamorphic and sedimentary rock, found on the toe slope of alluvial fans.

4.2.2. LAND COVER TYPES

Two land cover types, agriculture and developed/disturbed, were mapped within the Project Area (Figure 4). These are described in more detail below.

Agriculture - Orchard (255.21 acres). This agricultural landcover type is located throughout the Project Area and a portion of the Project Site and consists of what appears to be a peach orchard (Figure 4, Figure 5). Within the Project Site, the majority of the orchard has been uprooted and the remnants of the trees are laying on the ground (Figure 5). Non-native annual grasses and forbs dominate the open areas between rows within the Project Area.

Developed/Disturbed (64.74 acres). The uprooted orchard, solar arrays within the parcel, and dirt roads that border and bisect the parcel comprise this landcover type within the Project Area (Figure 4, Figure 5). These areas contain gravel, bare ground, or are dominated by sparse non-native grasses and forbs, which provide little habitat that would support special-status or common wildlife or plant species.

WETLANDS AND WATER FEATURES

No wetlands or other waters that could be considered jurisdictional by the ACOE, RWCQB, or CDFW were observed within the Project Site during the survey. A small detention pond is located in the center of the parcel (Figure 4); however, it is excluded from the Project Site by approximately 700 feet and therefore no impacts to this feature will occur under the Project.

4.3. SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT AREA

Results of the CNDDB and IPaC searches indicated 15 special-status wildlife species known to occur within the two-mile/two quad search radius of the Project Area (CDFW 2022; USFWS 2022). Of these, one has a moderate potential to occur (monarch), and the remaining 14 are not expected to occur or have a low potential to occur within the Project Area due to a lack of suitable habitat, or the site is outside of the species' known range. As such, these 14 species were removed from further consideration.

Monarch adults make massive, multi-generation migrations from August-October, flying south thousands of miles to hibernate along the California coast and in central Mexico. Monarchs stop to feed on flower nectar and to roost together at night. During warm winter days, the butterflies may take moisture and flower nectar. Most mating happens before they journey north in the spring, when females lay single eggs along the way under host plant leaves (milkweed, *Asclepias* sp.), and then the caterpillars eat flowers and leaves. Overwintering sites along the California coast are important for conservation of this species.

Although the Project Area does not provide suitable overwintering roost habitat for this species, suitable milkweed host plants for this species are present within and adjacent to the Project Site, and this species is known to move through the vicinity of the Project Area during migration periods.

Several (8+) barn owl nest boxes have been installed throughout the Project Area. While some have been damaged and are no longer usable, most were intact and prey remains/pellets were observed below the entrances, indicating that barn owls have recently used or are currently using the boxes. Although barn owls are not considered special-status by CDFW or USFWS, they are protected under Section 3503.5 of the California Fish and Game Code, and impacts to nesting barn owls would be considered a significant impact under CEQA.

A list of special-status wildlife species with potential to occur in the vicinity of the Project Area is included in Appendix A.

4.4. Special-Status Plant Species with Potential to Occur in the Project Area

Results of the IPaC, CNDDB and CNPS searches indicated seven special-status plant species known to occur within the two-mile/two quad search radius of the Project Area (CNPS 2022). None of these species are expected to occur within or adjacent to the Project Area due to a lack of suitable habitat, a lack of occurrences in the vicinity of the Project Area, or the Project Area is outside of the species' known range, therefore, these special-status plant species are not discussed further in this document.

A list of plant species with potential to occur in the vicinity of the Project Area is included in Appendix B.

4.5. Critical Habitat

Critical habitat is a term defined and used in the federal Endangered Species Act to specify geographic areas that contain features essential to the conservation of an endangered or threatened species, and that may require special management and protection. Critical habitat may also include areas that are not currently occupied by the species but will be needed for its recovery.

The Project Area does not fall within or adjacent to Critical Habitat limits for any special-status wildlife or plant species. The nearest Critical Habitat that has been mapped in the vicinity of the Project Area is for San Joaquin Orcutt grass (*Orcuttia inaequalis*) and vernal pool tadpole shrimp (*Lepidurus packardi*) approximately two miles north of the Project Area.

4.6. WILDLIFE CORRIDORS AND HABITAT LINKAGES

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as stepping stones for wildlife dispersal.

The Project Area is not recognized as an important wildlife corridor by any regional or state agency or jurisdiction and is not considered critical to the ecological functioning of adjoining open space areas. It likely supports local movement patterns and provides food and cover resources for common wildlife species. Temporary effects due to noise and increased human activity during project activities would not interfere with these local movement patterns over time or affect the ability of these species to forage or reproduce.

4.7. COMMON WILDLIFE AND PLANT SPECIES

Three common wildlife species, California scrub jay (*Aphelocoma californica*), European starling (*Sturnus vulgaris*, non-native), and mourning dove (*Zenaida macroura*), were detected during the field survey.

Common wildlife species adapted to life in proximity to human development, such as raccoon (*Procyon lotor*), coyote (*Canis latrans*), and striped skunk (*Mephitis mephitis*) are likely to move through the Project Area on a regular basis to find food and cover. Several common native and non-native bird species are likely to use the Project Area for nesting and foraging, as there is suitable habitat available throughout the Project Area (Figure 5).

A list of plants observed on the site during the field survey is included in Table 2 below.

Table 2. Plant Species Observed During the Field Survey

Scientific Name	Common Name
Aira caryophyllea	silver hairgrass
Asclepias fascicularis	narrowleaf milkweed
Brassica sp.	mustard
Bromus hordeaceus	soft brome
Erodium cicutarium	common stork's bill
Lactuca serriola	prickly lettuce
Malva parviflora	little mallow/cheeseweed
Matricaria discoidea	wild chamomile
Plantago lanceolata	English plantain
Salsola tragus	Russian thistle
Stellaria media	chickweed
Taeniatherum caput-medusae	medusahead
Taraxacum sp.	dandelion

5. RECOMMENDATIONS

This section addresses potential constraints to approval of the proposed Project as a result of the presence of sensitive biological resources and potential impacts to such resources that would result from project activities. Recommendations to address potential biological resource constraints are described below.

BIO-1: Preconstruction Nesting Bird Survey. All native birds in California are protected by the federal Migratory Bird Treaty Act (MBTA), and Section 3503.5 of the California Fish and Game Code specifically protects raptors. Ground disturbance, noise, or removal of vegetation that would result in destruction of active bird nests or disruption of breeding/nesting activity could be a violation of the MBTA and the California Fish and Game Code, as well as a significant impact under CEQA. Barn owls that are using or could potentially use the nest boxes in the Project Area are considered protected raptors.

Kleinfelder recommends a nesting bird survey be performed by a qualified biologist no earlier than one week prior to any construction during the nesting season (March 1 – August 31) to determine if any native birds are nesting on or near the site (including a 100-foot buffer for raptors). If any active nests are observed during surveys, a suitable avoidance buffer from the nests should be determined by the qualified biologist based on species, location, and extent and type of planned construction activity. These nests would be avoided until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. Kleinfelder also recommends removing any suitable nesting habitat (i.e., trees and vegetation) outside of the bird breeding season to avoid impacts to nesting birds.

Prior to the start of construction, a qualified biologist will check each barn owl nest box within 150 feet of the Project disturbance area to determine if they are actively being used by barn owls for nesting. Any active nest boxes will be flagged with a 150-foot buffer for avoidance during Project construction. All inactive nest boxes will be removed within 24 hours of the survey to ensure no impacts to barn owls will occur under the Project. All nest boxes will be mapped and recorded; the locations of inactive nest boxes will be transmitted to the Project proponent in order to facilitate removal or relocation of the boxes.

BIO-2: Trash Receptacles. Impacts to special-status species due to increased predation from construction activities could be considered a significant impact in the context of CEQA. All trash and waste items generated by construction or crew activities should be properly contained in a covered trash receptacle and removed from the Project Site daily or secured nightly in a locked trash receptacle. This includes biodegradable items, such as apple cores and banana peels, that attract predators such as raccoons and American crows that could prey upon sensitive wildlife species.

BIO-3: Monarch Butterfly Avoidance. Impacts to monarch butterfly eggs, larvae, or adults due to Project construction could be considered significant in the context of the FESA. Prior to construction, all milkweed plants within the disturbance footprint should be flagged and mapped by a qualified botanist with a mobile data collection device. These plants should be protected with high visibility fencing and avoided during construction with a 15-foot buffer wherever possible. Any plants that cannot be avoided during construction will be counted and recorded and the Project proponent will mitigate for the loss of milkweed plants by planting a native seed mix that includes native milkweed species (*Asclepias californica*, *A. cordifolia*, *A. eriocarpa*, *A. fascicularis*, or *A. vestita*) in open areas disturbed by the Project. For each plant directly impacted by the project (e.g., removed by trenching, grading, or paving), at least 100 square feet of disturbed area will be seeded at a rate of no less than 1 pound pure live seed (PLS) per acre. Seeds will

be sourced from as close to the Project Area as possible (either collected directly from impacted plants if possible or sourced from a commercial seed supplier from the County or as near to the County as available). The maximum acreage of the seeded area should not exceed the temporary disturbance area of the Project.

BIO-4: Common Wildlife Awareness. All Project personnel will visually check for animals in any pipes, culverts, or other open-ended materials and equipment stored on site for one or more overnight periods prior to moving, burying, or capping to ensure that no animals are present within the materials and equipment. To prevent accidental entrapment of wildlife during construction, all excavated holes, ditches, or trenches greater than six (6) inches deep will be covered at the end of each workday by suitable materials that cannot be displaced or escape ramps will be placed in excavations. After opening and before filling, such holes, ditches, and trenches will be thoroughly inspected for trapped animals.

REFERENCES CITED

16 U.S.C. 703–712. Migratory Bird Treaty Act, as amended.

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Appendix A
Special-Status Wildlife Species with Known or Potential Occurrence in the Vicinity of the RPCA Avenue 26 Solar Project in Madera County, California.

Common Name	Scientific Name	Federal/State Status[1]	Habitat Associations	Potential to Occur in the Project Area[2]
Invertebrates				
conservancy fairy shrimp	*Branchinecta conservatio*	Endangered/None	Conservancy fairy shrimp occurs in disjunct locations within Solano, Merced, Tehama, Butte, and Glenn counties. It is found in large, deep vernal pools that occur within annual grassland habitat.	Not expected to occur. Suitable aquatic habitat for this species is not present within or adjacent to the Project Area.
monarch – California overwintering population	*Danaus plexippus* (pop. 1)	Candidate Threatened/None	Monarch adults make massive, multi-generation migrations from August-October, flying south thousands of miles to hibernate along the California coast and in central Mexico. Monarchs stop to feed on flower nectar and to roost together at night. During warm winter days, the butterflies may take moisture and flower nectar. Most mating happens before they journey north in the spring, when females lay single eggs along the way under host plant leaves (*Asclepias* sp.); caterpillars eat flowers and leaves. Overwintering sites along the California coast are important for conservation of this species.	Moderate potential to occur. Suitable milkweed host plants for this species are present within or adjacent to the Project Site, although there are no known winter roosts in the vicinity of the Project area.
valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Threatened/None	Valley elderberry longhorn beetle is completely dependent on its host plant, elderberry (*Sambucus* sp.), which occurs in riparian and other woodland communities in California's Central Valley and the associated foothills. Female beetles lay their eggs in crevices on the stems or on the leaves of living elderberry plants. When the eggs hatch, larvae bore into the stems of the plant and the larval stage lasts for one to two years. The fifth instar larvae create emergence holes in the stems and then plug the holes and remain in the stems through pupation. Adults emerge through the holes from late March through June. The short-lived adult beetles forage on leaves and flowers of elderberry shrubs.	Not expected to occur. Suitable habitat for this species is not present within the Project area, as there are no elderberry shrubs within the Project area.
vernal pool fairy shrimp	*Branchinecta lynchi*	Threatened/None	Vernal pool fairy shrimp is adapted to seasonally inundated aquatic features and occur primarily in vernal pools and seasonal wetlands that fill with water during fall and winter rains, then dry up in spring and summer. Typically, the majority of pools in any vernal pool complex are not inhabited by the species at any one time. Different pools within or between complexes may provide habitat for the fairy shrimp in alternate years, as climatic conditions vary.	Not expected to occur. Suitable aquatic habitat for this species is not present within or adjacent to the Project area.

Common Name	Scientific Name	Federal/State Status[1]	Habitat Associations	Potential to Occur in the Project Area[2]
vernal pool tadpole shrimp	*Lepidurus packardi*	Endangered/None	Vernal pool tadpole shrimp is associated with low-alkalinity, ephemeral freshwater habitats in grasslands, including alkaline pools, clay flats, vernal lakes, vernal pools, vernal swales, and other seasonal wetlands in California. Suitable vernal pools and seasonal swales are generally underlain by hardpan or sandstone.	Not expected to occur. Suitable aquatic habitat for this species is not present within or adjacent to the Project area.
			Fish	
Delta smelt	*Hypomesus transpacificus*	Threatened/Endangered	Delta smelt are a euryhaline species. For a large part of their one-year life span, delta smelt live along the freshwater edge of the mixing zone (saltwater-freshwater interface). Shortly before spawning, adults migrate upstream from the brackish-water habitat associated with the mixing zone and disperse widely into river channels and tidally influenced backwater sloughs. They spawn in shallow, fresh or slightly brackish water upstream of the mixing zone.	Not expected to occur. Suitable aquatic habitat for this species is not present within or adjacent to the Project area.
			Amphibians and Reptiles	
blunt-nosed leopard lizard	*Gambelia sila*	Endangered/Endangered, FP	Blunt-nosed leopard lizard occurs in semi-arid grasslands, alkali flats, and washes in the San Joaquin Valley and surrounding valleys and foothills. It is a diurnal species that uses mammal dens and burrows for shelter and cover and breeds from May to June.	Not expected to occur. Suitable habitat for this species is not present within or adjacent to the Project area.
California tiger salamander (Central California DPS)	*Ambystoma californiense*	Threatened/Threatened	California tiger salamander (CTS) may be found in riparian and wet meadow habitats but is more common in annual grasslands. Temporary or permanent freshwater pools (e.g., vernal pools and wetlands) are required for egg-laying and larval development; however, they appear to be absent in waters containing predatory game fish. CTS spends most of its life cycle underground in adjacent valley oak woodland or grassland habitat, primarily in rodent burrows. Breeding takes place following the first heavy winter rains.	Not expected to occur. Suitable habitat for this species is not present within or adjacent to the Project area.
giant gartersnake	*Thamnophis gigas*	Threatened/Threatened	Giant gartersnake is found in isolated populations restricted to the Central Valley of California. It is found in freshwater marshes, wetlands, irrigation ditches, low gradient streams (absent of predatory fish), and rice fields containing emergent vegetation. Adjacent upland grassland habitat is necessary for cover and aestivation.	Not expected to occur. Suitable aquatic habitat for this species is not present within or adjacent to the Project area.
western spadefoot	*Spea hammondii*	None/SSC	Western spadefoot inhabits areas with slightly moist, friable soils in mostly treeless habitats. They are usually absent from narrow canyons and highly mesic habitats and require rain pools with little to no vegetation for spawning.	Not expected to occur. Suitable habitat for this species is not present within or adjacent to the Project area.

Common Name	Scientific Name	Federal/State Status[1]	Habitat Associations	Potential to Occur in the Project Area[2]
		Birds		
bald eagle	*Haliaeetus leucocephalus*	Delisted, BGEPA /Endangered, FP	Bald eagle lives near large bodies of open water such as lakes, marshes, estuaries, seacoasts and rivers where fish are abundant. It usually nests within one mile of water in tall trees with open branch work bordering lakes or large rivers. In Central California, bald eagles prefer foothill pines for nesting.	Low potential to occur. Although Berenda Reservoir is located approximately 0.35 mile north of the Project area and provides suitable foraging habitat for this species, there are no suitable nest trees within or adjacent to the Project area.
burrowing owl	*Athene cunicularia*	None/SSC	Burrowing owl utilizes abandoned ground squirrel burrows in open habitats, grasslands, and disturbed areas, typically on levees, mounds or areas where there are unobstructed views of possible predators such as raptors or foxes. Prey items include insects, small mammals, reptiles and amphibians.	Not expected to occur. Suitable habitat for this species is not present within or adjacent to the Project area.
Swainson's hawk	*Buteo swainsoni*	None/Threatened	Swainson's hawk spends the breeding season in the Central Valley of California and is commonly found in agricultural areas or open grasslands containing solitary trees for nesting. Diet consists of insects, small mammals and reptiles.	Low potential to occur. Although Swainson's hawks have been known to occasionally nest in orchards, suitable foraging habitat is not present within or adjacent to the Project area, and the nearest documented occurrence of this species is approximately 7 miles north of the Project area.
		Mammals		
Fresno kangaroo rat	*Dipodomys nitratoides exilis*	Endangered/Endangered	Fresno kangaroo rat is one of three subspecies of San Joaquin kangaroo rats adapted for survival in an arid environment. They dig and shelter in burrows, or use previously existing burrows in relatively light, sandy soils in raised areas. There are usually two to five burrow entrances that slant gently underground, and one or more holes that open from a vertical shaft. Fresno kangaroo rats diet consists primarily of seeds, but they may also eat some types of green herbaceous vegetation and insects. Breeding is probably initiated in winter after the onset of the rainy season and young are born in the burrow, where they remain until they are fully furred and able to move about easily. A variety of predators, including the endangered San Joaquin kit fox, prey upon this species and their burrows are used extensively by the endangered blunt-nosed leopard lizard and other reptiles.	Not expected to occur. Suitable habitat for this species is not present within or adjacent to the Project area.

Common Name	Scientific Name	Federal/State Status[1]	Habitat Associations	Potential to Occur in the Project Area[2]
San Joaquin kit fox	*Vulpes macrotis mutica*	Endangered/Threatened	San Joaquin kit fox occurs in grasslands and agricultural areas along the edges of the San Joaquin Valley. It uses dens created by other mammals, as well as larger pipes and culverts for cover. It is primarily a nocturnal species and feeds on small mammals, birds and reptiles.	Low potential to occur. No suitably sized dens or suitable habitat for this species were observed during the field survey, and the nearest documented occurrence is over 8 miles north of the Project area near Le Grand, which is the only documented occurrence of this species in the 7.5-minute USGS Le Grand quadrangle.

[1]Status Legend

SSC: Species of Special Concern (CDFW)
FP: Fully Protected (CDFW)
BGEPA: Bald and Golden Eagle Protection Act (USFWS)

[2] Definitions Regarding Potential for Occurrence

- Not expected to occur – Habitat within and adjacent to the Project site is unsuitable for the species life history requirements (foraging, breeding, cover, range, elevation, hydrology, vegetation community, site history, and/or disturbance regime) There are no documented occurrences of the species in the vicinity of the Project site.
- Low – Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the Project site is unsuitable or of poor quality. The species is not likely to found within the Project site. Any documented occurrences are farther than likely possible for the species to occur in the Project site.
- Moderate – Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the Project site is unsuitable. There are documented occurrences in the near vicinity of the Project site and therefore, the species has a moderate probability of being found within the Project site.
- High – All of the habitat components meeting the species requirements are present, and/or most of the habitat on or adjacent to the Project site is highly suitable. There are documented occurrences of the species on or immediately adjacent to the Project site and therefore, the species has a high probability of being found within the Project site.
- Present – Species was observed within the Project site or has been recorded (i.e., CNDDB, or other reports) within the Project site recently.

Sources:

California Department of Fish and Wildlife (CDFW). 2022. California Natural Diversity Database (CNDDB). Rarefind, Version 5 (Commercial Subscription) dated April 2, 2021. Accessed May 2022. https://apps.wildlife.ca.gov/rarefind/view/RareFind.aspx

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Appendix B
Special-Status Plant Species with Known or Potential Occurrence in the Vicinity of the RPCA Avenue 26 Solar Project in Madera County, California.

Scientific Name	Common Name	Status (Federal/State, CRPR)	Life Form/Habitat Associations/ Elevation Range (feet)/Blooming Period/	Potential to Occur in the Project Area
Atriplex cordulata var. *cordulata*	heartscale	None/None, CRPR 1B.2	Annual herb. Saline or alkaline substrates in chenopod scrub, meadows and seeps, and sandy conditions in valley and foothill grassland. Elevation 0-1,700 feet. Blooms Apr-Oct.	Not expected to occur. Suitable habitat for this species is not present within or adjacent to the Project area.
Atriplex minuscula	lesser saltscale	None/None, CRPR 1B.1	Annual herb. Affinity to sandy alkaline substrates in valley and foothill grassland, playas, and chenopod scrub. Elevation 50–700 feet. Blooms May–Oct	Not expected to occur. Suitable habitat for this species is not present within or adjacent to the Project area.
Castilleja campestris ssp. *succulenta*	succulent owl's-clover	Threatened/Endangered, CRPR 1B.2	Annual herb. Found in vernal pools, often with acidic conditions. Elevation 165-2,460 feet. Blooms (Mar) Apr–May.	Not expected to occur. Suitable habitat for this species is not present within or adjacent to the Project area.
Eryngium spinosepalum	spiny-sepaled button-celery	None/None, CRPR 1B.2	Annual or perennial herb. Vernal pools in valley and foothill grasslands. Elevation 260–3,200 feet. Blooms Apr–Jun.	Not expected to occur. Suitable habitat for this species is not present within or adjacent to the Project area.
Navarretia nigelliformis ssp. *radians*	shining navarretia	None/None, CRPR 1B.2	Annual herb. Associates with vernal pools in cismontane woodland and valley and foothill grasslands. Elevation 200–3,280. Blooms (Mar) Apr–Jul.	Not expected to occur. Suitable habitat for this species is not present within or adjacent to the Project area.
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Threatened/Endangered, CRPR 1B.1	Annual herb. Associates with vernal pools. Elevation 30–2,500 feet. Blooms Apr-Sep.	Not expected to occur. Suitable habitat for this species is not present within or adjacent to the Project area.
Tuctoria greenei	Greene's tuctoria	Endangered/Rare, CRPR 1B.1	Annual herb. Vernal pools. Elevation 30–2,500 feet. Blooms May-Jul (Sep).	Not expected to occur. Suitable habitat for this species is not present within or adjacent to the Project area.

Status Legend:
CRPR 1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
CRPR 2A: Plants Presumed Extirpated in California, But More Common Elsewhere
CRPR 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Source:

California Native Plant Society (CNPS). 2022. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. Accessed May 2022.

Source: Bing Maps

0 1.5 3 Miles

0 2.5 5 Kilometers

N

Scale 1:190,080
1 in = 3 miles

Figure 1. Regional Vicinity
RPCA Avenue 26 Solar Project
Madera County, California
Biological Resources Assessment

KLEINFELDER
Bright People. Right Solutions.

Source: Bing Maps

0 600 1,200 Feet

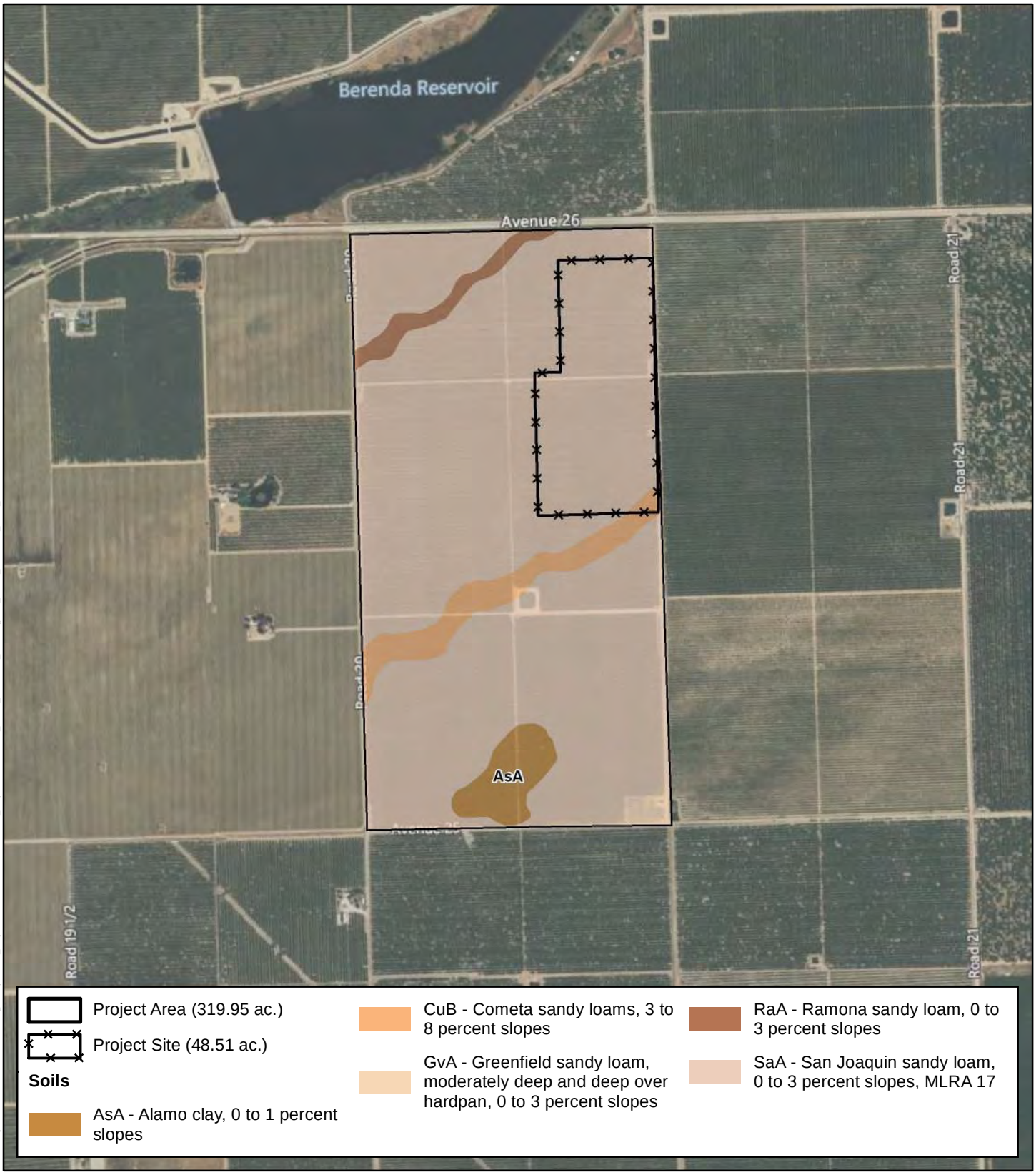
0 200 400 Meters

N

Scale 1:14,400
1 Inch = 1,200 Feet

Figure 2. Project Location
RPCA Avenue 26 Solar Project
Madera County, California
Biological Resources Assessment

KLEINFELDER
Bright People. Right Solutions.



Source: gSSURGO (October 2021)

0 600 1,200 Feet

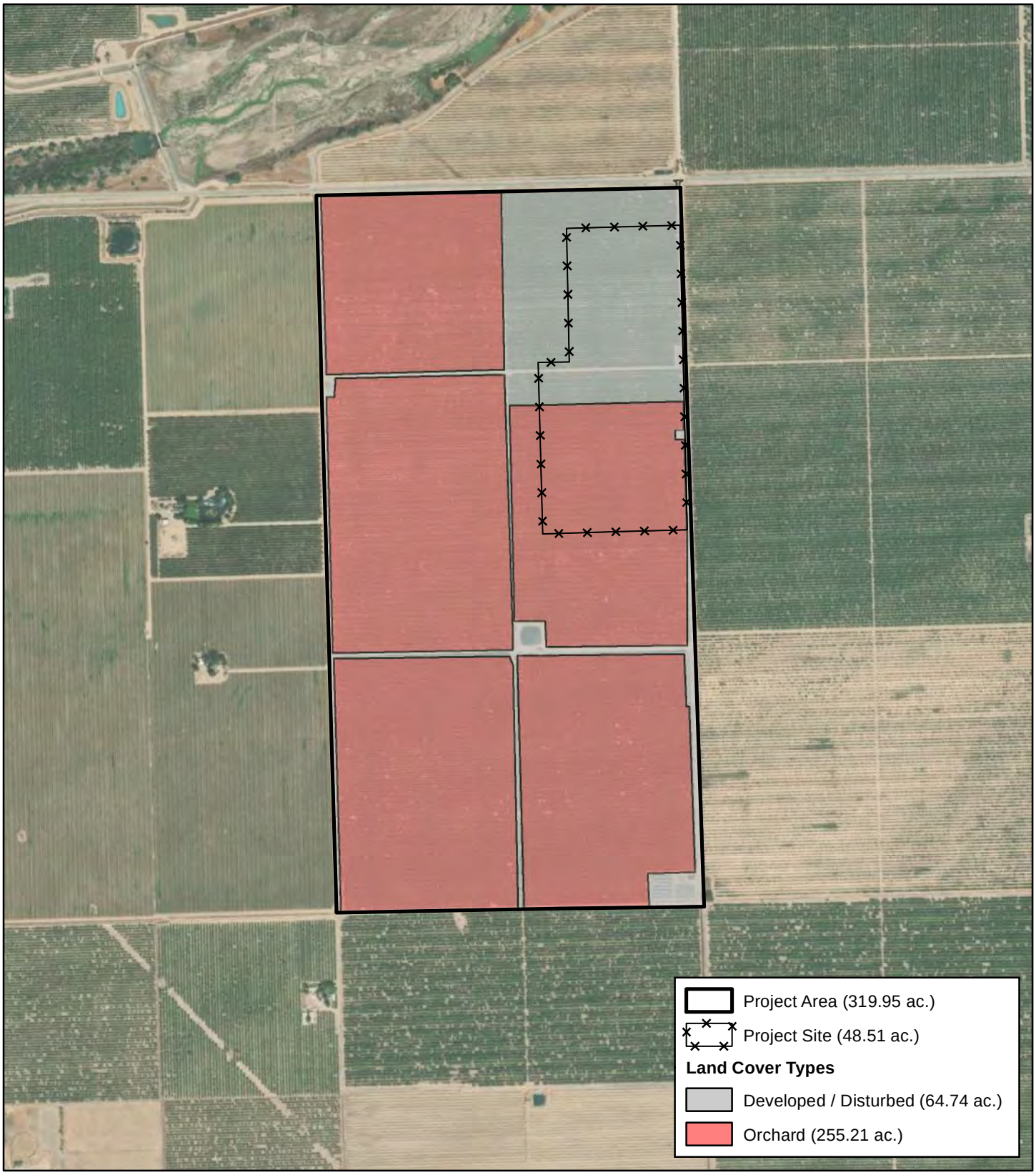
0 200 400 Meters

N

Scale 1:14,400

Figure 3. Soils
RPCA Avenue 26 Solar Project
Madera County, California
Biological Resources Assessment

KLEINFELDER
Bright People. Right Solutions.



Source: Bing Maps

0 500 1,000 Feet

0 150 300 Meters

N

Scale 1:12,000
1 Inch = 1,000 Feet

Figure 4. Land Cover Types
RPCA Avenue 26 Solar Project
Madera County, California
Biological Resources Assessment

KLEINFELDER
Bright People. Right Solutions.

Photo 1. Looking west along northern boundary of parcel and Avenue 26

Photo 2. Looking south along access road with Project Site on the right

Photo 3. Looking east through middle of Project Area toward Project Site

Photo 4. Uprooted orchard within Project Site

Photo 5. Disturbed area between uprooted orchard within Project Site

Photo 6. Barn owl box along eastern boundary of Project Site

Figure 5a. Photos
RPCA Avenue 26 Solar Project
Merced County, California
Biological Resources Assessment

KLEINFELDER
Bright People. Right Solutions.

Photo 7. Recent barn owl pellet

Photo 8. Peach orchard within Project Area

Photo 9. Looking north along western access road with adjacent vineyard on left

Photo 10. Milkweed observed within uprooted orchard rows

Photo 11. Small solar array along eastern edge of Project Area

Photo 12. Solar array in southeastern corner of Project Area

Figure 5b. Photos
RPCA Avenue 26 Solar Project
Merced County, California
Biological Resources Assessment

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Bright People. Right Solutions.

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Technical Memorandum

To:	Brian Smith, RPCA Solar 1 LLC
From:	Stephen Barrett
Date:	June 24, 2022
RE:	Glare Study, Avenue 26 Solar, Madera County California

Executive Summary

RPCA Solar 1 LLC (RPCA Solar 1) is developing the Avenue 26 Solar Project (Project or Proposed Project), a solar photovoltaic (PV) energy generating facility on private land in Madera County, California east of the City of Chowchilla. RPCA Solar 1 has engaged Barrett Energy Resources Group (BERG) to evaluate potential glare impacts of the Proposed Project to sensitive receptors in the vicinity of the Project. For purposes of this analysis sensitive receptors include nearby residents, motor vehicles, and aviation related uses at Chowchilla Municipal Airport. To complete this task, BERG utilized the Solar Glare Hazard Analysis Tool (SGHAT) to predict potential glare and assessed the results relative to the Federal Aviation Administration's (FAA) Solar Policy and ocular hazard standard as applicable. While the Project is not on airport land and is not subject to FAA review for potential glare impacts, it is subject to local evaluation and consistency review under County Ordinance Chapter 18.78, Airport Airspace Overlayed District.

The results of this analysis show that, as designed, **the Project will not result in adverse glare impacts to aviation and ground- based sensitive receptors**. This memorandum describes the methodology and results of the glare study.

Project Description

RPCA Solar 1 is proposing a ground-mounted single axis tracking solar array on private land adjacent to Avenue 26 in unincorporated Madera County, California. The Project would be located in an agricultural area near the Berenda Reservoir east of the more densely populated City of Chowchilla. The site is approximately 3 ¼ miles east of the Chowchilla Municipal Airport (**Figure 1)**.

The total capacity of the solar facility would be 12 MWdc (8 MWac). It is proposed to be constructed in two phases with the first phase being 4.5 MWdc (3 MWac) and the second phase 7.5 MWdc (5 MWac). For the purposes of the glare analysis, the total capacity of the Project, including both phases, has been assessed.

Chowchilla Municipal (2O6) is a general aviation airport owned and operated by the City of Chowchilla. It has a single runway, 12/30. It does not have an air traffic control tower.

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Figure 1. Solar Project Proposed Near Chowchilla Municipal Airport

FAA Solar Policy

In response to the growing solar electricity market and the specific interests of airports and their tenants to develop solar projects on airport property, the FAA published "Interim Policy, FAA Review of Solar Energy System Projects on Federally-Obligated Airport" in October 2013. The Interim Policy was intended to communicate to airports and FAA technical reviewers the methods for assessing glare from solar PV projects proposed on airport property and the standards for determining impact. It also specifies the use of modeling to assess glare and directs project developers to the Solar Glare Hazard Analysis Tool (SGHAT). The SGHAT was developed by the US Department of Energy at the request of the FAA. The Final FAA Solar Policy was issued in May 2021. The Final FAA Solar Policy is the primary reference for assessing potential impacts of glare on aviation receptors. The US Department of Defense (DOD) has also adopted SGHAT and the associated requirements to analyze glare under Instruction (DODI) 4165.57. Given that the model is used as a tool for protecting aviation against potential adverse glare impacts, it has also been widely accepted for evaluating other glare sensitive receptors on the ground.

Glare Methodology and Standard of Impact

Prediction of potential glare occurrence from a solar PV project requires knowledge of the sun position, observer location, and the solar module/array characteristics (e.g., location, extent, tilt, azimuth or orientation, etc.). The path of glare is governed by the law of reflection which states

that the angle of incidence equals the angle of reflection as shown in **Figure 2**. Vector algebra is then used to determine if glare would be visible from the prescribed observation points.

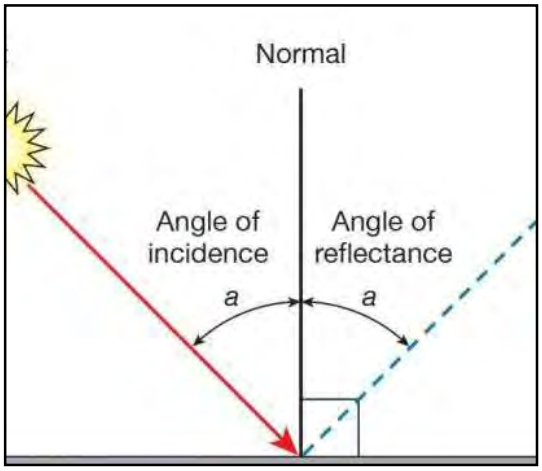

Figure 2. Law of Reflection

Figure 3 provides a simple representation of how the sun can inflict glare on an air traffic control tower at a specific time and location. For glare from the sun to reflect off a solar array and impact receptors on the ground, the sun's position must be low on the horizon (e.g., shortly after sunrise and before sunset). As the sun moves, the incidence of glare subsides.

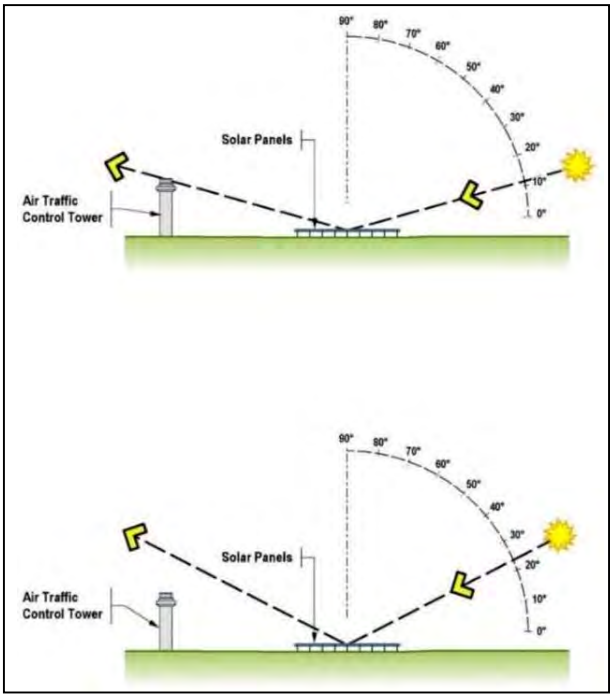

Figure 3. Geometric Representation of Potential Glare Impacts from the Sun

The FAA's Final Solar Policy specifies the glare methodology and ocular hazard standard required for solar PV projects located at airports. The FAA's Final Solar Policy directs proponents to model glare using SGHAT or an acceptable alternative. For this analysis, BERG used SGHAT Version 3 released in the spring of 2016 under the brand "GlareGauge." For consistency with the FAA's Final Solar Policy, the model is referred to as SGHAT.

With regards to the ocular hazard standard, the SGHAT model reports predicted glare intensity in a color-coded system at three levels:

- green, a low potential for an after-image[1];
- yellow, a potential for an after-image; and
- red, a potential for retinal burn.

The Final Policy includes an ocular hazard standard which establishes the glare intensity depicted by the color-coded system that is deemed significant and thereby determined to produce a potential hazard to air navigation. The standard in the Interim Policy (2013) prohibits any glare (red, yellow, or green category) from impacting the air traffic control tower (ATCT), while allowing for a low potential for an after image (green) for pilots on approach to the airport. A yellow or red result would represent a significant and unacceptable impact per FAA Policy.

The FAA considered public comments, including pilot experience with glare from solar panels, prior to issuing a Final Policy 2021. With these considerations, **the FAA's Final Policy determined that glare associated with solar panels is not novel and concluded that any category of glare experienced by a pilot as a result of a solar project is insignificant.** While the FAA now only requires a glare analysis for potential impacts to the ATCT, the model is still being used when requested by local authorities to assess potential impacts on pilots relative to the more stringent Interim Policy.

For non-aviation receptors, like those associated with the Avenue 26 Solar Project, the results are simply used to determine if glare is predicted or not.

SGHAT Model Setup for the Proposed Project

Regardless of the receptor to be analyzed, the model set-up entails locating the solar project, inputting its design characteristics, and identifying sensitive receptors for analysis. The position and movement of the sun throughout the year is built into the model.

[1] An after-image occurs when you look directly into a bright light, then look away. It typically takes several seconds for your vision to readjust and return to normal. It is also referred to as a temporary visual disability or flash blindness.

BERG used the PV project polygon tool to draw the footprint of each solar array on SGHAT's interactive Google map, and then input the fundamental solar PV design elements. The Proposed Project is designed as a single axis tracking system and the SGHAT addresses the following relevant fields for those elements including for this Project design:

- a maximum angle of 52°;
- a resting angle of 5°;
- backtracking method of shade-slope which minimizes shading;
- panel height of 15 feet above ground level (agl); and
- panel surface including anti-reflective coating.

Figure 4 is a simple schematic showing how the solar panels track the sun's position throughout the day.

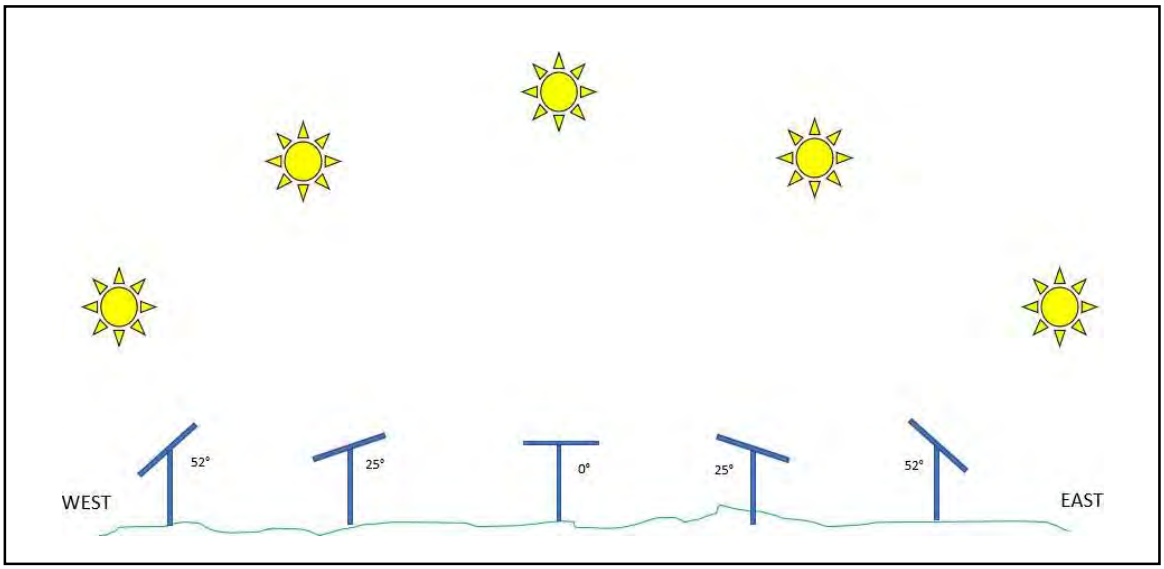

Figure 4. Schematic of Solar Tracking System Through a One-Day Cycle

The next step is to input information on the airport sensitive receptors to be analyzed in the model. Chowchilla Municipal Airport does not have a manned control tower and therefore there are no "sensitive receptors" at the airport. It does have a single runway with two runway ends that were analyzed relative to the FAA's Interim Policy for guidance.

To assess potential glare impacts to pilots, BERG activated the flight path tool and selected the threshold (or end) of the first runway and selected a second point away from the threshold to represent a straight-on approach pathway. The model automatically draws the flightpath from the threshold out to two miles for analysis. This step was repeated for the other approach pathway. **Figure 5** shows the location of the solar array and the two-mile flight paths (in light purple) analyzed in accordance with FAA methodology.

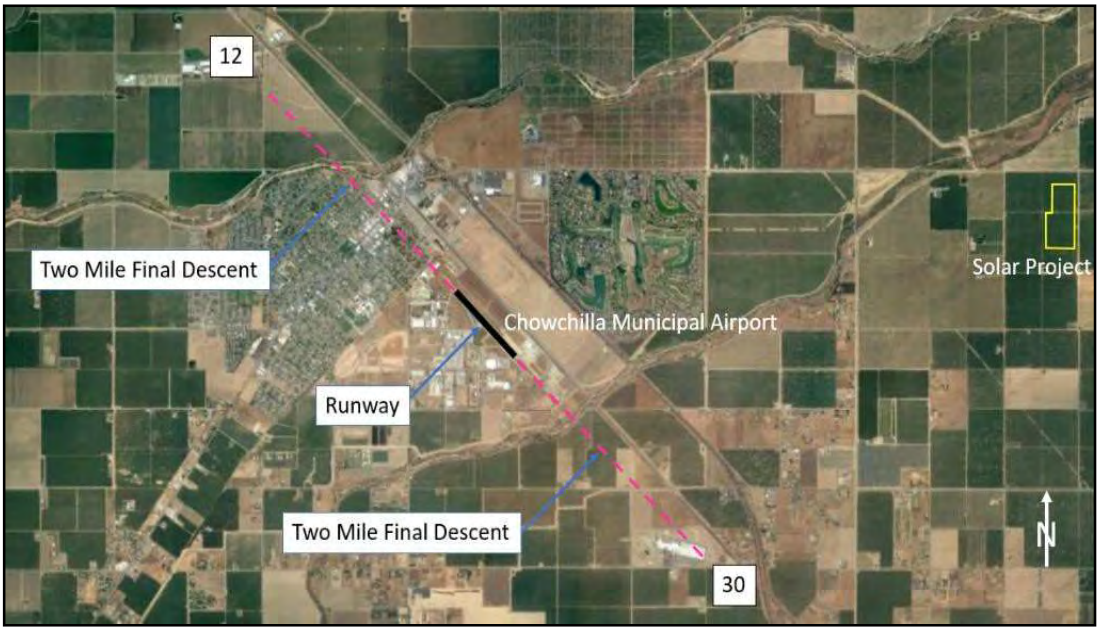

Figure 5. Airport Sensitive Receptors at Chowchilla Municipal Airport

For the ground-based analysis, ten receptors, which are representative of expected results from others nearby, were selected for analysis. The sensitive receptors are motor vehicles associated with Avenues 25 and 26, and Roads 20 and 21, as well as nearby residences.

The model's observation point tool was used to select individual points located on the Google map for glare assessment. Eight motorist and two residential locations were analyzed as shown on **Figure 6**. For the motor vehicle receptors, the driver's height above the roadway was set at 5 feet. For the stationary receptors, the viewpoint was set at 5 feet above ground level (agl) to represent a person standing on the property.

Figure 6. Ground-based Sensitive Receptors Selected for Analysis

The glare analysis button was activated and the model calculated glare from various sun angles at 1-minute intervals throughout the year to predict if glare could be observed by the specified sensitive receptors.

Glare Model Results and Analysis

The SGHAT model output for the analysis of aviation receptors is included as Attachment A and for the ground-based receptors is provided in Attachment B. **The report shows that no glare is predicted to impact pilots on final approach to either runway end. Furthermore, no glare is predicted for any of the ground-based receptors selected for analysis.**

The single axis tracking system is effective in eliminating potential glare from receptors close to the ground. This is due first to the design and operational elements where the face of the panel is always perpendicular to the sun as the sun moves across the sky during the day. The effect is that the sun's rays contact the panel and the portion that is reflected returns back toward the sun and not toward any receptor on the ground. This concept is illustrated in **Figure 7**.

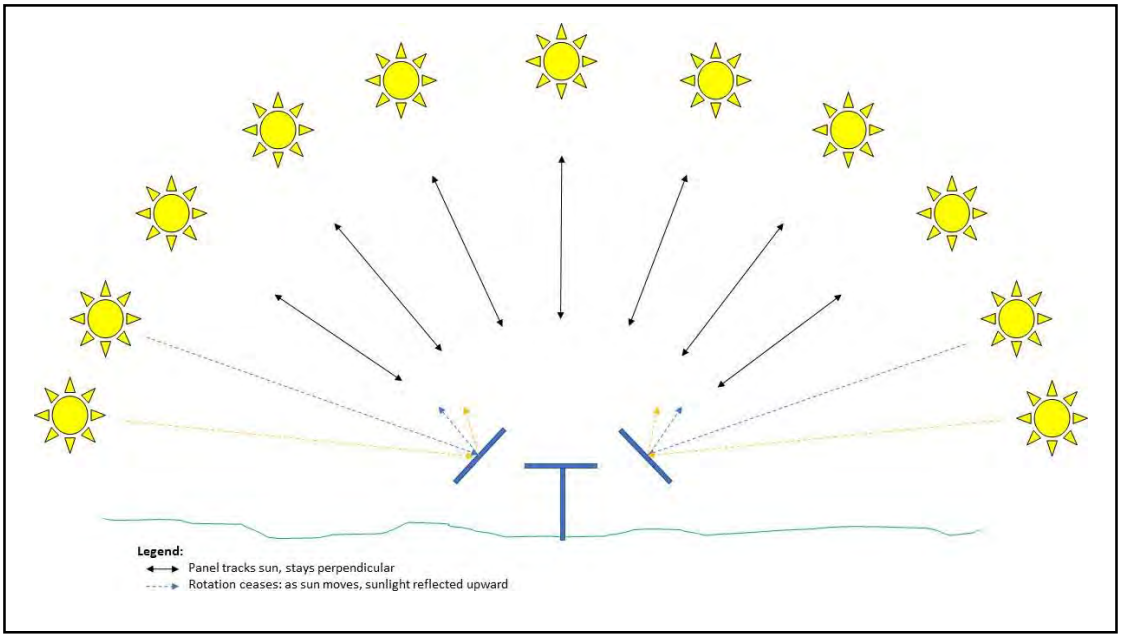

Figure 7. Tracking System Mitigates Glare for Low-to-Ground Receptors

The second project element of the tracking system that mitigates glare is the starting and stopping angle of the panels. Because the panels do not extract much energy from the sun when it is low on the horizon, the tracking system does not remain perpendicular to the sun at the beginning and end of each day. If it did, the sun may contact the panel surface and reflect back toward the sun at a low angle and close to the ground. Instead, the panel is already angled such that any reflection from the rising or setting sun is cast upward and away from the ground. Once the sun rises to a position in the sky where it is perpendicular to the panel "resting" angle, the tracking commences. At the end of the day, the panel reaches the same angle where it started the day, stops tracking, and, as the sun continues to set, any reflection off the panel is cast upward. This concept is also shown in Figure 7.

Conclusions

BERG has evaluated potential glare impacts from the Proposed Project on aviation related sensitive receptors at Chowchilla Municipal Airport (2O6) in Chowchilla California and on ground-based receptors like motor vehicles and residences near the project site. The facility is designed as a ground-mounted, single axis tracking system with a total capacity of 12 MWdc (8 MWac). The study evaluated potential impacts of glare on pilots during two-mile final descent to each of the two runway ends relative to the FAA's solar policy and ocular hazard standard. It also analyzed potential impacts of glare on ten representative motor vehicle and residential receptors near the project site.

The SGHAT model registered no glare for any of the receptors analyzed. This result is consistent with the operation of the single axis tracking design which is effective at mitigating glare on sensitive receptors close to the ground.

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Attachment A

Aviation Receptors

Glare Modeling Results

FORGESOLAR GLARE ANALYSIS

Project: **Avenue 26 Solar Project**
A ground-mounted single axis tracking solar photovoltaic system in Madera County, near Chowchilla, California.

Site configuration: **Preferred**
Analysis conducted by Stephen Barrett (steve@barrettenergygroup.com) at 22:05 on 25 May, 2022.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
2-mile flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 69685.12328
Methodology: V2

PV Array(s)

Name: Solar Array
Description: Ground-mounted Single axis tracking facility
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 52.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.33
Rated power: 11999.0 kW
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.126328	-120.175007	283.53	15.00	298.53
2	37.119758	-120.175093	278.22	15.00	293.22
3	37.119827	-120.178955	277.12	15.00	292.12
4	37.123454	-120.178955	278.64	15.00	293.64
5	37.123454	-120.177582	279.00	15.00	294.00
6	37.126328	-120.177582	281.62	15.00	296.62

Flight Path Receptor(s)

Name: Rwy 12
Description:
Threshold height: 50 ft
Direction: 134.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°

Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.116445	-120.250963	237.20	50.00	287.20
Two-mile	37.136529	-120.277075	233.05	607.61	840.66

Name: Rwy 30
Description:
Threshold height: 50 ft
Direction: 314.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°

Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	37.110155	-120.243078	239.68	50.00	289.68
Two-mile	37.090071	-120.216967	245.79	597.35	843.13

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
Solar Array	SA tracking	SA tracking	0	0	34,200,000.0

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
Rwy 12	0	0
Rwy 30	0	0

Results for: Solar Array

Receptor	Green Glare (min)	Yellow Glare (min)
Rwy 12	0	0
Rwy 30	0	0

Flight Path: Rwy 12

0 minutes of yellow glare
0 minutes of green glare

Flight Path: Rwy 30

0 minutes of yellow glare
0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to V1 algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

Attachment B

Ground-Based Receptors

Glare Modeling Results

FORGESOLAR GLARE ANALYSIS

Project: **Avenue 26 Solar Project**

A ground-mounted single axis tracking solar photovoltaic system in Madera County, near Chowchilla, California.

Site configuration: **Preferred - Ground Receptors**

Client: Renewable Properties

Created 06 Jun, 2022
Updated 06 Jun, 2022
Time-step 1 minute
Timezone offset UTC-8
Site ID 70211.12328
Category 5 MW to 10 MW
DNI peaks at 1,000.0 W/m^2
Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
Methodology V2

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
Solar Array	SA tracking	SA tracking	0	0.0	0	0.0	34,200,000.0

Total annual glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0

Component Data

PV Arrays

Name: Solar Array
Description: Ground-mounted Single axis tracking facility
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 52.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.33
Rated power: 11999.0 kW
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	37.126328	-120.175007	283.53	15.00	298.53
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4	37.123454	-120.178955	278.64	15.00	293.64
5	37.123454	-120.177582	279.00	15.00	294.00
6	37.126328	-120.177582	281.62	15.00	296.62

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	37.127283	-120.193112	264.31	5.00
OP 2	2	37.127146	-120.176676	279.46	5.00
OP 3	3	37.127214	-120.164402	287.55	5.00
OP 4	4	37.125127	-120.192254	274.47	5.00
OP 5	5	37.121021	-120.187791	271.38	5.00
OP 6	6	37.122835	-120.183971	273.44	5.00
OP 7	7	37.123074	-120.165947	283.60	5.00
OP 8	8	37.112740	-120.192983	264.54	5.00
OP 9	9	37.112740	-120.176633	279.33	5.00
OP 10	10	37.112671	-120.163543	285.12	5.00

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
Solar Array	SA tracking	SA tracking	0	0.0	0	0.0	34,200,000.0

Total annual glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0

PV: Solar Array no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0

Solar Array and OP 1

Receptor type: Observation Point
No glare found

Solar Array and OP 2

Receptor type: Observation Point
No glare found

Solar Array and OP 3

Receptor type: Observation Point
No glare found

Solar Array and OP 4

Receptor type: Observation Point
No glare found

Solar Array and OP 5

Receptor type: Observation Point
No glare found

Solar Array and OP 6

Receptor type: Observation Point
No glare found

Solar Array and OP 7

Receptor type: Observation Point
No glare found

Solar Array and OP 8

Receptor type: Observation Point
No glare found

Solar Array and OP 9

Receptor type: Observation Point
No glare found

Solar Array and OP 10

Receptor type: Observation Point
No glare found

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare. This primarily affects V1 analyses of path receptors.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

EXHIBIT K

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2022-AWP-8764-OE

Issued Date: 06/22/2022

Peter Brydon
Renewable Properties, LLC
879 Sanchez Street
San Francisco, CA 94114

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel RPCA Avenue 26 Solar Phase I & II
Location:	Chowchilla, CA
Latitude:	37-07-20.20N NAD 83
Longitude:	120-10-40.61W
Heights:	281 feet site elevation (SE)
	30 feet above ground level (AGL)
	311 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 12/22/2023 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

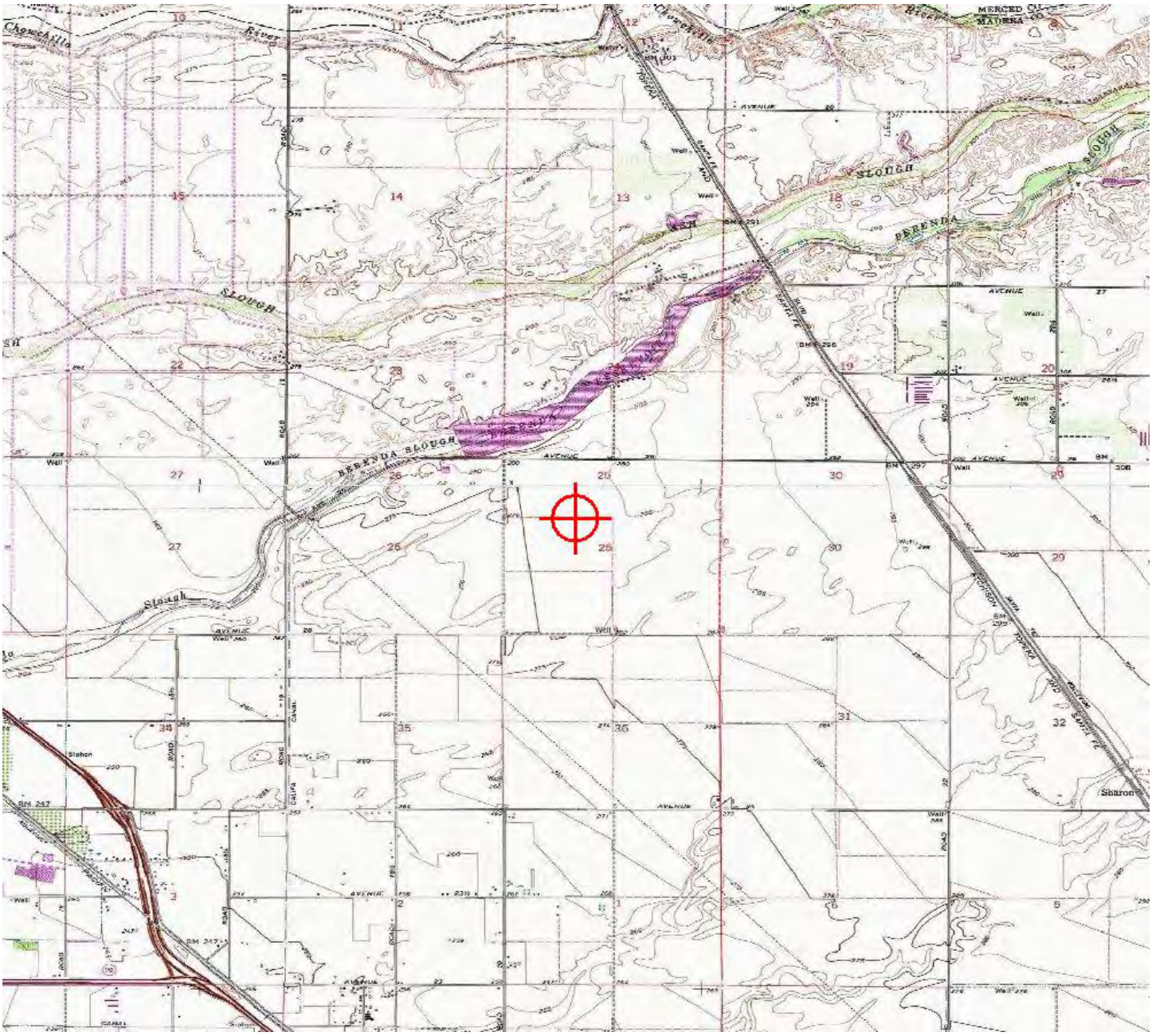
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (206) 231-2989, or dan.shoemaker@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2022-AWP-8764-OE.

Signature Control No: 526506378-538726740 (DNE)
Daniel Shoemaker
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2022-AWP-8764-OE



Sectional Map for ASN 2022-AWP-8764-OE

EXHIBIT L

Community and Economic Development
Environmental Health Division

Dexter Marr
Deputy Director

- 200 W. Fourth St.
- Suite 3100
- Madera, CA 93637
- TEL (559) 661-5191
- FAX (559) 675-6573
- TDD (559) 675-8970

MEMORANDUM

TO: Annette Kephart

FROM Dexter Marr, Environmental Health Division

DATE: July 15, 2022

RE: RPCA Solar 1 LLC - Conditional Use Permit - Chowchilla (030-161-001-000)

Comments

TO: Planning Division
FROM: Environmental Health Division
DATE: July 13, 2022
RE: Conditional Use Permit (CUP) #2022-013, RPCA Solar 1 LLC, Chowchilla-APN 030-161-001

The Environmental Health Division Comments:

Maintain all Local and State setback requirements as it relates to municipal or private water and wastewater services.

During the application process for required County permits, a more detailed review of the proposed project's compliance with all current local, state & federal requirements will be reviewed by this Division.

The construction and then ongoing operation must be done in a manner that shall not allow any type of public nuisance(s) to occur including but not limited to the following nuisance(s); Dust, Odor(s), Noise (s), Lighting, Vector(s) or Litter. This must be accomplished under accepted and approved Best Management Practices (BMP) and as required by the County General Plan, County Ordinances, and any other related State and/or Federal jurisdiction.

If there are any questions or comments regarding these conditions/requirements, contact this Division at (559) 675-7823.

EXHIBIT M

COUNTY OF MADERA
DEPARTMENT OF PUBLIC WORKS

200 West 4th Street
Madera, CA 93637-8720
Main Line - (559) 675-7811
Special districts - (559) 675-7820
Fairmead Landfill - (559) 665-1310

MEMORANDUM

DATE: July 15, 2022

TO: Annette Kephart

FROM Phu Duong, Public Works

SUBJECT RPCA Solar 1 LLC - Conditional Use Permit - Chowchilla (030-161-001-000)

Comments

Below are preliminary conditions of approval from Public Works:

The easterly property line of the subject parcel aligns with road 20.5 roadway alignment to the south. Road 20.5 is designated as a Minor road with a 60-foot road right of way (30 feet on each side of the road centerline). It is asked that the 30 feet along the easterly property line be dedicated/reserved as an easement for future public road access.

Prior to any construction where such construction takes place within an existing public right-of-way, the developer is required to apply for an Encroachment Permit from the Public Works Department. Said permit must be approved prior to commencing the work.

All proposed driveway approaches must be designed per county standard ST-24B for commercial use unless approved otherwise. Such approaches will be inspected by the Public Works inspector.

Except as approved and permitted by the County, all appurtenances, such as fences along with private signs, shall be located outside of the public road right-of-way.

COUNTY OF MADERA
DEPARTMENT OF PUBLIC WORKS

200 West 4th Street
Madera, CA 93637-8720
Main Line - (559) 675-7811
Special districts - (559) 675-7820
Fairmead Landfill - (559) 665-1310

MEMORANDUM

DATE: September 26, 2022

TO: Annette Kephart

FROM Phu Duong, Public Works

SUBJECT RPCA Solar 1 LLC - Conditional Use Permit - Chowchilla (030-161-001-000)

Comments

In addition to previous conditions of approval, the applicant or its representatives shall practice best management practices during the construction stage of the solar facility.

No mud and/or debris shall be tracked onto public roads.

No construction equipment or vehicles of any kind be allowed to blocking the flow of traffics or causing any sight distances/safety hazards to the general public within the area of work.

The applicant or his contractors will be responsible for any damages to the road during the construction of the facility, including but not limited to, existing pavement or neighboring properties.

COUNTY OF MADERA
DEPARTMENT OF PUBLIC WORKS

200 West 4th Street
Madera, CA 93637-8720
Main Line - (559) 675-7811
Special districts - (559) 675-7820
Fairmead Landfill - (559) 665-1310

MEMORANDUM

DATE: July 27, 2022

TO: Annette Kephart

FROM Madera County Public Works

SUBJECT RPCA Solar 1 LLC - Conditional Use Permit - Chowchilla (030-161-001-000)

Comments

At the time of applying for the building permits, if any grading is to occur, the applicant is required to submit a grading, drainage, and erosion control plans to the Public Works Department for review. Such improvement plans shall be prepared by a licensed professional.

Contractor and Owner are responsible to ensure that the proper BMPs and erosion control measures are in place. Sediment is not allowed to leave the site during construction.

The contractor and owner will be responsible for any damage caused by runoff from construction site that is not permitted.

All National Pollution Discharge Elimination System (NPDES) storm water regulations and standards shall be met. It is possible that the quality of storm water may be affected by pollutants. The applicant shall mitigate any impacts associated with storm water contamination caused by this project. A Storm Water Pollution Prevention Plan (SWPPP) is required for all projects 1-acre or more of site disturbance.

Contractor shall be responsible for locating all underground utilities prior to the start of any work by contacting Underground Service Alert (USA) 48 hours prior to any excavation at 1-800-227-2600 Contractor shall be responsible for contacting the appropriate party in advance of any work for necessary inspections in compliance to these plans, standard plans and standard specifications.

EXHIBIT N

Community and Economic Development
Fire Prevention Division

Deborah Mahler, Fire Marshal
Deputy Director

200 W. Fourth St.
Suite 3100
Madera, CA 93637
TEL (559) 661-5191
FAX (559) 675-6573
TDD (559) 675-8970

MEMORANDUM

TO: Annette Kephart

FROM Deborah Mahler, Fire Marshal

DATE: September 26, 2022

RE: RPCA Solar 1 LLC - Conditional Use Permit - Chowchilla (030-161-001-000)

Condition

The new site plan appears to meet the state requirement for access:

20 foot wide all-weather vehicle access shall be provided within 150 feet of all portions of the project.

A KNOX box entry device shall be installed in conjunction with all gated access.

All proposed gated openings shall be 2 feet wider than the travel way.

EXHIBIT O

From: Hernandez, Edgar@DOT
To: Annette Kephart
Cc: Padilla, Dave@DOT
Subject: RE: CUP #2022-013, RPCA Solar 1 LLC -Conditional Use Permit -Chowchilla (030-161-001-000)
Date: Thursday, July 14, 2022 9:15:06 AM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png

Good morning Annette,

The project Applicant indicated delivery vehicles will be staggered as equipment is delivered and at most there will be approximately 40 vehicles over during the peak construction period for the proposed solar energy facility on approximately 46-acres of a 319 acre parcel. After further review, Caltrans has no further comment.

Thank you for sending this over.

Respectfully,

Edgar Hernandez
District 6 Office of Planning
Associate Transportation Planner
Work Cell: (559) 981-7436

From: Annette Kephart <annette.kephart@maderacounty.com>
Sent: Monday, July 11, 2022 1:13 PM
To: Hernandez, Edgar@DOT <Edgar.Hernandez@dot.ca.gov>
Subject: RE: CUP 2022-013

Thank you.

Annette Kephart | Planner III
COMMUNITY AND ECONOMIC DEVELOPMENT, PLANNING
200 W. 4th Street, Suite 3100, Madera, CA 93637

EXHIBIT P

County of Madera
California Environmental Quality Act (CEQA)
Initial Study

1. Project title:	CUP #2022-013 – RPCA Solar 1, LLC
2. Lead agency name and address:	County of Madera Community and Economic Development Department 200 West 4th Street, Suite 3100 Madera, California 93637
3. Contact person and phone number:	Annette Kephart, Planner III 559-675-7821 Annette.kephart@maderacounty.com
4. Project Location & APN:	The project is located on the south side of Avenue 26 approximately 3/4 mile west of its intersection with Road 21 (no situs) Chowchilla. APN# 030-161-001
5. Project sponsor's name and address:	RPCA Solar 1, LLC 879 Sanchez Street San Francisco, CA 94114
6. General Plan Designation:	AE (Agricultural Exclusive)
7. Zoning:	ARE-40 (Agricultural, Rural, Foothill - Forty Acre) District

8. Description of project:

Construction of an approximately 8MWac solar photo-voltaic energy generating facility on approximately 46-acres of a 319-acre parcel. The Project will be constructed in two phases and will interconnect to a PG&E preexisting electrical distribution system.

Existing Conditions:

The project is located on a 318.48-acre parcel that is in almond production.

Land use in the surrounding area is predominantly agricultural including annual crops, vineyard orchards and other semi-agricultural uses or agricultural related infrastructure. Almonds, grapes, and pistachios are the top crops.

The parcel is 318.48 acres in size and the project is proposed on 46-acres of the parcel.

9. Surrounding Land Uses and Setting:

Agricultural

10. Other Public Agencies Whose Approval is Required:

None

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

No comments have been received from local tribes.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

DETERMINATION (to be completed by Lead Agency)	
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 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 measures 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.

Signed: _____ Date: August 17, 2022

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS 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?	☐	☐	☒	☐

Responses:

(a - c) No Impact. There are no scenic vistas in the vicinity of this project site. There are no scenic resources on this property that will be damaged as a result of this project. Limited grading will take place on-site. The proposed solar facility will be surrounded by agricultural land which will not degrade the visual character of the surrounding area.

(d) Less than Significant. The proposed project was analyzed using the Solar Glare Hazard Analysis Tool (SGHAT). The glare study evaluated potential glare impacts from the Proposed Project on aviation related sensitive receptors at Chowchilla Municipal Airport (2O6) in Chowchilla California and on groundbased receptors like motor vehicles and residences near the project site. The facility is designed as a ground-mounted, single axis tracking system with a total capacity of 12 MWdc (8 MWac). The study evaluated potential impacts of glare on pilots during two-mile final descent to each of the two runway ends relative to the FAA's solar policy and ocular hazard standard. It also analyzed potential impacts of glare on ten representative motor vehicle and residential receptors near the project site.

The SGHAT model registered no glare for any of the receptors analyzed. This result is consistent with the operation of the single axis tracking design which is effective at mitigating glare on sensitive receptors close to the ground.

The Federal Aviation Administration provided a Determination of No Hazard to Air Navigation for the project.

Conditions have been placed for any proposed lighting associated with this project to be hooded and directed downward and away from adjoining parcels.

General Information

A nighttime sky in which stars are readily visible is often considered a valuable scenic/visual resource. In urban areas, views of the nighttime sky are being diminished by "light pollution." Light pollution, as defined by the international dark-Sky Association, is any adverse effect of artificial light, including sky glow, glare, light trespass, light clutter, decreased visibility at night, and energy waste. Two elements of light pollution may affect city residents: sky glow and light trespass. Sky glow is a result of light fixtures that emit a portion of their light directly upward into the sky where light scatters, creating an orange-yellow glow above a city or town. This light can interfere with views of the nighttime sky and can diminish the number of stars that are visible. Light trespass occurs when poorly shielded or poorly aimed fixtures cast light into unwanted areas, such as neighboring property and homes.

Light pollution is a problem most typically associated with urban areas. Lighting is necessary for nighttime viewing and for security purposes. However, excessive lighting or inappropriately

designed lighting fixtures can disturb nearby sensitive land uses through indirect illumination. Land uses which are considered “sensitive” to this unwanted light include residences, hospitals, and care homes.

Daytime sources of glare include reflections off light-colored surfaces, windows, and metal details on cars traveling on nearby roadways. The amount of glare depends on the intensity and direction of sunlight, which is more acute at sunrise and subset because the angle of the sun is lower during these times.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
II. AGRICULTURAL AND FORESTRY RESOURCES In determining whether agricultural 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?	☐	☐	☐	☒

Responses:

(a) Less Than Significant Impact. The Farmland Mapping and Monitoring Program of the California Resources Agency classifies the current parcel as Unique Farmland. The applicants current and proposed use is allowed in the ARE-40 (Agricultural Rural Exclusive 40-Acre) District with a Conditional Use Permit. With the current groundwater issues occurring in the Madera Subbasin the solar facility is determined as an appropriate use for agricultural lands.

(b) No Impact. The project will be constructed on a parcel that is enrolled not enrolled in the Williamson Act.

(c, d, e) No Impact. There are no forest land, or zoning for forest land, in the vicinity of the project site.

General Information

The California 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 agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value.

The Department of Conservation oversees the Farmland Mapping and Monitoring Program. The 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 irrigation status; the best quality land is called Prime Farmland. The maps are updated every two years with the use of a computer mapping system, aerial imagery, public review, and field reconnaissance. The program's definition of land is below:

PRIME FARMLAND (P): Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

FARMLAND OF STATEWIDE IMPORTANCE (S): Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

UNIQUE FARMLAND (U): Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include no irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

FARMLAND OF LOCAL IMPORTANCE (L): Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

GRAZING LAND (G): Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

URBAN AND BUILT-UP LAND (D): Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

OTHER LAND (X): Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

VACANT OR DISTURBED LAND (V): Open field areas that do not qualify as an agricultural category, mineral and oil extraction area, off road vehicle areas, electrical substations, channelized canals, and rural freeway interchanges.

_____

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
III. AIR QUALITY Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with, or obstruct implementation of, the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☐	☒
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Responses:

(a - b) No Impact. No significant impacts have been identified as a result of this project. The proposed project will not obstruct implementation of any air quality plans. The project is consistent with the Air Quality Element of the General Plan.

(c - d) Less Than Significant Impact. During construction, the delivery vehicles will be staggered as equipment is delivered and maximum of approximately 40 vehicles over the peak construction period which is expected to last for a few weeks. Once operational, the site will be accessed infrequent for routine maintenance.

The project was circulated to San Joaquin Valley Air Pollution Control District, no comments were received.

Sensitive receptors are facilities that "house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollution. Hospitals, schools, convalescent facilities and residential areas are examples of sensitive receptors." (GAMAQI, 2002).

Due to the rural agricultural landscape surrounding the proposed project, there will not be a large number of sensitive receptors that could be effected by the proposed project.
The project is consistent with the Air Quality Element of the General Plan and does not represent an impact.

Global Climate Change

Climate change is a shift in the "average weather" that a given region experiences. This is measured by changes in temperature, wind patterns, precipitation, and storms. Global climate is the change in the climate of the earth as a whole. It can occur naturally, as in the case of an ice age, or occur as a result of anthropogenic activities. The extent to which anthropogenic activities influence climate change has been the subject of extensive scientific inquiry in the past several decades. The Intergovernmental Panel on Climate Change (IPCC), recognized as the leading research body on the subject, issued its Fourth Assessment Report in February 2007, which asserted that there is "very high confidence" (by IPCC definition a 9 in 10 chance of being correct) that human activities have resulted in a net warming of the planet since 1750.

The California Environmental Quality Act (CEQA) requires an agency to engage in forecasting "to the extent that an activity could reasonably be expected under the circumstances. An agency cannot be expected to predict the future course of governmental regulation or exactly what information scientific advances may ultimately reveal" (CEQA Guidelines Section 15144, Office of Planning and Research commentary, citing the California Supreme Court decision in Laurel Heights Improvement Association v. Regents of the University of California [1988] 47 Cal. 3d 376).

Recent concerns over global warming have created a greater interest in greenhouse gases (GHG) and their contribution to global climate change (GCC). However at this time there are no generally accepted thresholds of significance for determining the impact of GHG emissions from an individual project on GCC. Thus, permitting agencies are in the position of developing policy and guidance to ascertain and mitigate to the extent feasible the effects of GHG, for CEQA purposes, without the normal degree of accepted guidance by case law.

_____

Less Than
Significant

	Potentially Significant Impact	With Mitigation Incorporation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES 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 U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of a native wildlife nursery site?	☐	☐	☒	☐
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?	☐	☐	☐	☒

Responses:

(a) Less Than Significant Impact. While species have been identified as being potentially in the quadrangle of this project, no impacts to those species have been identified as a result of this project, directly or indirectly. These identified species in the quadrangle does not necessarily mean they are located on the project site either in a habitat setting or migrating through. Due to a lack of suitable habitat, a lack of occurrences in the vicinity of the Project

Area, or the Project Area is outside of the species' known range this impact is projected as less than significant.

(b - c) No Impact. No impacts on riparian habits or wetlands have been identified as a result of this project. There are no vernal pools or habitats identified on the project site, nor any that would be impacted directly or indirectly as a result of this project. There are no federally identified wetlands on the project site. A biological survey was completed on the project site. No wetlands or other waters that could be considered jurisdictional by the ACOE, RWCQB, or CDFW were observed within the Project Site during the survey. A small detention pond is in the center of the parcel; however, it is excluded from the Project Site by approximately 700 feet and therefore no impacts to this feature will occur under the Project.

(d) No Impact. The Project Area is not recognized as an important wildlife corridor by any regional or state agency or jurisdiction and is not considered critical to the ecological functioning of adjoining open space areas. It likely supports local movement patterns and provides food and cover resources for common wildlife species. Temporary effects due to noise and increased human activity during project activities would not interfere with these local movement patterns over time or affect the ability of these species to forage or reproduce.

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as stepping-stones for wildlife dispersal.

(e - f) No Impact. The Project Area does not fall within or adjacent to Critical Habitat limits for any special-status wildlife or plant species. The nearest Critical Habitat that has been mapped in the vicinity of the Project Area is for San Joaquin Orcutt grass (*Orcuttia inaequalis*) and vernal pool tadpole shrimp (*Lepidurus packardi*) approximately two miles north of the Project Area.

While the list below shows species listed in the quadrangle in which this project is located, this does not necessarily mean that this species is located on the project site either in a habitat setting or migrating through. The CNDB only lists species in the quadrangle where the project is located, but this never is an indication of whether these species are or ever were on the project site. The Department of Fish and Wildlife was contacted in the early stages of the project for review and comment on the proposal. They did not provide any feedback as to whether there were any potential impacts on the site.

General Information

Special Status Species include:

- Plants and animals that are legally protected or proposed for protection under the California Endangered Species Act (CESA) or Federal Endangered Species Act (FESA);
- Plants and animals defined as endangered or rare under the California Environmental Quality Act (CEQA) §15380;
- Animals designated as species of special concern by the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Game (CDFG);
- Animals listed as "fully protected" in the Fish and Game Code of California

(§3511, §4700, §5050 and §5515); and

- Plants listed in the California Native Plant Society's (CNPS) Inventory of
- Rare and Endangered Vascular Plants of California.

A review of both the County's and Department of Fish and Wildlife's databases for special status species have identified the following species:

Species	Federal Status	State Status	Dept. of Fish and Game Listing	CNPS Listing
Swainson's hawk	None	Threatened	-	-
vernal pool fairy shrimp	Threatened	None	-	-
heartscale	None	None	-	1B.2
lesser saltscale	None	None	-	1B.1
succulent owl's-clover	Threatened	Endangered	-	1B.2
Ewan's larkspur	None	None	-	4.2

Gregg Quadrangle

List 1A: Plants presumed extinct

List 1B: Plants Rare, Threatened, or Endangered in California and elsewhere.

List 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere

List 3 Plants which more information is needed – a review list

List 4: Plants of Limited Distributed - a watch list

Ranking

0.1 – Seriously threatened in California (high degree/immediacy of threat)

0.2 – Fairly threatened in California (moderate degree/immediacy of threat)

0.3 – Not very threatened in California (low degree/immediacy of threats or no current threats known)

SSC Species of Special Concern

WL Watch List

General Information

Effective January 1, 2007, Senate Bill 1535 took effect that has changed de minimis findings procedures. The Senate Bill takes the de minimis findings capabilities out of the Lead Agency hands and puts the process into the hands of the California Department of Fish and Wildlife (formally the California Department of Fish and Game). A Notice of Determination filing fee is due each time a NOD is filed at the jurisdictions Clerk's Office. The authority comes under Senate Bill 1535 (SB 1535) and Department of Fish and Wildlife Code 711.4. Each year the fee is evaluated and has the potential of increasing. For the most up-to-date fees, please refer to: http://www.dfg.ca.gov/habcon/cega/cega_changes.html.

The Valley Elderberry Longhorn Beetle (VELB) was listed as a threatened species in 1980. Use of the elderberry bush by the beetle, a wood borer, is rarely apparent. Frequently, the only exterior evidence of the elderberry's use by the beetle is an exit hole created by the

larva just prior to the pupal stage. According to the USFWS, the Valley Elderberry Longhorn Beetle habitat is primarily in communities of clustered Elderberry plants located within riparian habitat. The USFWS stated that VELB habitat does not include every Elderberry plant in the Central Valley, such as isolated, individual plants, plants with stems that are less than one inch in basal diameter or plants located in upland habitat.

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	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES 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 formal cemeteries?	☐	☐	☒	☐

Responses:

(a - c) Less Than Significant Impact. The cultural resource inventory of the Area of Potential Effects (APE) included a review of the natural and cultural environment including the prehistory, ethnography, and history; a review of historic maps; record search results from the SSVJIC; consultation with the Native American Heritage Commission; Native American correspondence; and a pedestrian survey. As a result of these efforts, the study determined there are no previous or newly identified cultural resources in the APE. These results, compounded with the high amount of disturbance due to past and current use as agricultural land, have reduced the potential for subsurface cultural materials within the APE.

General Information

Public Resource Code 5021.1(b) defines a historic resource as "any object building, structure, site, area or place which is historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." These resources are of such import, that it is codified in CEQA (PRC Section 21000) which prohibits actions that "disrupt, or adversely affect a prehistoric or historic archaeological site or a property of historical or cultural significance to a community or ethnic or social groups; or a paleontological site except as part of a scientific study."

Archaeological importance is generally, although not exclusively, a measure of the archaeological research value of a site which meets one or more of the following criteria:

- Is associated with an event or person of recognized significance in California or American history or of recognized scientific importance in prehistory.

- Can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable archaeological research questions.

- Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind.

- Is at least 100 years old and possesses substantial stratigraphic integrity (i.e. it is essentially undisturbed and intact).

- Involves important research questions that historic research has shown can be answered only with archaeological methods.

Reference CEQA Guidelines §15064.5 for definitions.

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

Responses:

(a & b) Less Than Significant Impact. A temporary increase in energy resources may result during the construction period. The projects construction phases will include grading, equipment delivery, and installation of the solar array. Once operational solar photo-voltaic energy will be provided to a PG&E pre-existing electrical distribution system.

There will be a small increase in vehicle trips generated during construction. Once operational, the site will be accessed infrequently. The delivery vehicles will be staggered as equipment is delivered and at maximum will be approximately 40 vehicles over the peak construction period which is expected to last for a few weeks. During construction, up to 50 workers may be employed at the site. During operations, typically two (but up to 4) members of the Operations and Maintenance (O&M) team on an as needed basis.

Adopted federal vehicle fuel standards have continually improved since their original adoption in 1975 and assists in avoiding the inefficient, wasteful and unnecessary use of energy by vehicles.

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	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS 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 Zone 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 geological 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 wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Responses:

(a. i – iii) Less Than Significant Impact. Madera County is divided into two major physiographic and geologic provinces: the Sierra Nevada Range and the Central Valley. The Sierra Nevada physiographic province in the northeastern portion of the county is underlain by metamorphic and igneous rock. It consists mainly of homogenous types of granitic rocks, with several islands of older metamorphic rock. The central and western parts of the county are part of the Central Valley province, underlain by marine and non-marine sedimentary rocks.

The foothill area of the County is essentially a transition zone, containing old alluvial soils that have been dissected by the west-flowing rivers and streams which carry runoff from the Sierra Nevada's.

Seismicity varies greatly between the two major geologic provinces represented in Madera County. The Central Valley is an area of relatively low tectonic activity bordered by mountain ranges on either side. The Sierra Nevada's, partly within Madera County, are the result of movement of tectonic plates which resulted in the creation of the mountain range. The Coast Ranges on the west side of the Central Valley are also a result of these forces, and continued movement of the Pacific and North American tectonic plates continues to elevate the ranges. Most of the seismic hazards in Madera County result from movement along faults associated with the creation of these ranges.

There are no active or potentially active faults of major historic significance within Madera County. The County does not lie within any Alquist Priolo Special Studies Zone for surface faulting or fault creep.

However, there are two significant faults within the larger region that have been and will continue to be, the principle sources of potential seismic activity within Madera County.

San Andreas Fault: The San Andreas Fault lies approximately 45 miles west of the county line. The fault has a long history of activity and is thus a concern in determining activity in the area.

Owens Valley Fault Group: The Owens Valley Fault Group is a complex system containing both active and potentially active faults on the eastern base of the Sierra Nevada Range. This group is located approximately 80 miles east of the County line in Inyo County. This system has historically been the source of seismic activity within the County.

The *Draft Environmental Impact Report* for the state prison project near Fairmead identified faults within a 100 mile radius of the project site. Since Fairmead is centrally located along Highway 99 within the county, this information provides a good indicator of the potential seismic activity which might be felt within the County. Fifteen active faults (including the San Andreas and Owens Valley Fault Group) were identified in the *Preliminary Geotechnical Investigation*. Four of the faults lie along the eastern portion of the Sierra Nevada Range, approximately 75 miles to the northeast of Fairmead. These are the Parker Lake, Hartley Springs, Hilton Creek and Mono Valley Faults. The remaining faults are in the western portion of the San Joaquin Valley, as well as within the Coast Range, approximately 47 miles west of Fairmead. Most of the remaining 11 faults are associated with the San Andreas, Calaveras, Hayward and Rinconada Fault Systems which collectively form the tectonic plate boundary of the Central Valley.

In addition, the Clovis Fault, although not having any historic evidence of activity, is considered to be active within quaternary time (within the past two million years), is

considered potentially active. This fault line lies approximately six miles south of the Madera County line in Fresno County. Activity along this fault could potentially generate more seismic activity in Madera County than the San Andreas or Owens Valley fault systems. However, because of the lack of historic activity along the Clovis Fault, there is inadequate evidence for assessing maximum earthquake impacts.

Seismic ground shaking, however, is the primary seismic hazard in Madera County because of the County's seismic setting and its record of historical activity (General Plan Background Element and Program EIR). The project represents no specific threat or hazard from seismic ground shaking, and all new construction will comply with current local and state building codes. Other geologic hazards, such as landslides, lateral spreading, subsidence, and liquefaction have not been known to occur within Madera County.

According to the Madera County General Plan Background Report, groundshaking is the primary seismic hazard in Madera County. The valley portion of Madera County is located on alluvium deposits, which tend to experience greater groundshaking intensities than areas located on hard rock. Therefore, structures located in the valley will tend to suffer greater damage from groundshaking than those located in the foothill and mountain areas.

Liquefaction is a process whereby soil is temporarily transformed to a fluid form during intense and prolonged ground shaking. According to the Madera County General Plan Background Report, although there are areas of Madera County where the water table is at 30 feet or less below the surface, soil types in the area are not conducive to liquefaction because they are either too coarse in texture or too high in clay content; the soil types mitigate against the potential for liquefaction.

(a - iv) No Impact. There are no known impacts that will occur as a direct or indirect result of this project. The area is topographically flat, so landslides are not as common.

(b) Less Than Significant Impact. The parcel is subject to potential erosion due to rain events. Due to the topographically flat nature of the project site, potential erosion is seen to be minimal.

(c – f) No Impact. There are no known impacts that will occur as a direct or indirect result of this project.

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	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS 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?	☐	☐	☒	☐

Responses:

(a - b) Less than Significant Impact. A slight increase in greenhouse gases generated will be from vehicular traffic during construction. During construction, the delivery vehicles will be staggered as equipment is delivered and maximum of approximately 40 vehicles over the peak construction period which is expected to last for a few weeks. Once operational, the site will be accessed infrequent for routine maintenance.

Greenhouse Gas (GHG) Emissions: The potential effect of greenhouse gas emission on global climate change is an emerging issue that warrants discussion under CEQA. Unlike the pollutants discussed previously that may have regional and local effects, greenhouse gases have the potential to cause global changes in the environment. In addition, greenhouse gas emissions do not directly produce a localized impact, but may cause an indirect impact if the local climate is adversely changed by its cumulative contribution to a change in global climate. Individual development projects contribute relatively small amounts of greenhouse gases that when added to other greenhouse gas producing activities around the world would result in an increase in these emissions that have led many to conclude is changing the global climate. However, no threshold has been established for what would constitute a cumulatively considerable increase in greenhouse gases for individual development projects. The State of California has taken several actions that help to address potential global climate change impacts.

Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006, outlines goals for local agencies to follow in order to bring Greenhouse Gas (GHG) emissions to 1990 levels (a 25% overall reduction) by the year 2020. The California Air Resources Board (CARB) holds the responsibility of monitoring and reducing GHG emissions through regulations, market mechanisms and other actions. A Draft Scoping Plan was adopted by CARB in order to provide guidelines and policy for the State to follow in its steps to reduce GHG. According to CARB, the scoping plan's GHG reduction actions include: direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

Following the adoption of AB 32, the California State Legislature adopted Senate Bill 375, which became the first major bill in the United States that would aim to limit climate change by linking directly to "smart growth" land use principles and transportation. It adds incentives for projects which intend to be in-fill, mixed use, affordable and self-contained developments. SB 375 includes the creation of a Sustainable Communities Strategy (SCS) through the local Metropolitan Planning Organizations (MPO) in order to create land use patterns which reduce overall emissions and vehicle miles traveled. Incentives include California Environmental Quality Act streamlining and possible exemptions for projects which fulfill specific criteria.

IX. HAZARDS AND HAZARDOUS MATERIALS Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public o environment through the routine transport, us 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Responses:

(a – b) Less than Significant Impact. The project proposal will not bring significant hazardous impact to the surrounding area. A Health and Safety Report was prepared for

the project by Barrett Energy Resources Group. No significant impacts were found.

(c – d) No Impact. No impacts have been identified as a result of this project. The project is not listed a hazardous site nor is located with one-quarter mile of an existing school.

(e - g) No Impact. The project is not located within the vicinity of a private airstrip. No impacts have been identified as a result of this project

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. The California Code of Regulations (CCR) defines a hazardous material as a substance that, because of physical or chemical properties, quantity, concentration, or other characteristics, may either (1) cause an increase in mortality or an increase in serious, irreversible, or incapacitating illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed (CCR Title 22 Division 4.5 Chapter 10 Article 2 §66260.10).

Hazardous wastes are defined in the same manner. Hazardous wastes are hazardous materials that no longer have practical use, such as substances that have been discarded, discharged, spilled, contaminated or are being stored prior to proper disposal. Hazardous materials and hazardous wastes are classified according to four properties: toxicity, ignitability, corrosively, and reactivity.

General Information

Any hazardous material because of its quantity, concentration, physical or chemical properties, pose a significant present or potential hazard to human health and safety, or the environment the California legislature adopted Article I, Chapter 6.95 of the Health and Safety Code, Sections 25500 to 25520 that requires any business handling or storing a hazardous material or hazardous waste to establish a Business Plan. The information obtained from the completed Business Plans will be provided to emergency response personnel for a better-prepared emergency response due to a release or threatened release of a hazardous material and/or hazardous waste.

Business owners that handle or store a hazardous material or mixtures containing a hazardous material, which has a quantity at any one time during the year, equal to or greater than:

1) A total of 55 gallons,
2) A total of 500 pounds,
3) 200 cubic feet at standard temperature and pressure of compressed gas,
4) Any quantity of Acutely Hazardous Material (AHM).

Assembly Bill AB 2286 requires all business and agencies to report their Hazardous Materials Business Plans to the Certified Unified Program Agency (CUPA) information electronically at http://cers.calepa.ca.gov

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

Responses:

(a - b) No Impact. No impacts to water quality standards or waste discharge requirements have been identified.

The proposed project is a low-impact development and does not require municipal water, ground water or sewer service. The water for panel cleaning will be provided by truck as needed.

(c i - iii) Less Than Significant Impact. The project is not anticipated to create or contribute to erosion or runoff. The topography of the project site is flat and was previously used for agricultural purposes.

(c - iv) No Impact. No impacts have been identified as a result of this project.

(d) No Impact. A seiche is an occasional and sudden oscillation of the water of a lake, bay or estuary producing fluctuations in the water level and caused by wind, earthquakes or changes in barometric pressure. A tsunami (from the Japanese language, roughly translated as "harbor wave") is an unusually large sea wave produced by seaquake or undersea volcanic eruption. According to the California Division of Mines and Geology, there are no active or potentially active faults of major historic significance within Madera County. Additionally, there are no bodies of water (lakes, etc.) within proximity of the site. Madera County is geographically located in the center of the state, therefore not affected by tsunamis.

(e) No Impact. The project will not utilize municipal or groundwater. Any water used will be delivered to the site by truck as needed for solar panel cleaning.

Rainfall is unable to percolate into paving that is expected to be on each site (building pad, driveways, structures, etc.) and is converted almost entirely into storm run-off, often exceeding the capacity of existing drainage system, causing intermittent flooding, increased flooding and other adverse impacts. It is possible that the quality of storm water may be affected by pollution such as, but not limited to, oil, grease, fuel, dissolved metals from batteries, and glycols from automotive coolant or antifreeze. The applicant shall mitigate any impacts associated with storm water contamination caused by this project.

General Information

Groundwater quality contaminants of concern in the Valley Floor include high salinity (total dissolved solids), nitrate, uranium, arsenic, methane gas, iron, manganese, slime production, and dibromochloropropane with the maximum contaminant level exceeded in some areas. Despite the water quality issues noted above, most of the groundwater in the Valley Floor is of suitable quality for irrigation. Groundwater of suitable quality for public consumption has been demonstrated to be present in most of the area at specific depths.

Groundwater quality contaminants of concern in the Foothills and Mountains include manganese, iron, high salinity, hydrogen sulfide gas, uranium, nitrate, arsenic, and methylbutylethylene (MTBE) with the maximum concentration level being exceeded in some areas. Despite these problems, there are substantial amounts of good-quality groundwater in each of the areas evaluated in the Foothills and Mountains. Iron and manganese are commonly removed by treatment. Uranium treatment is being conducted on a well by the Bass Lake Water Company.

A seiche is an occasional and sudden oscillation of the water of a lake, bay or estuary producing fluctuations in the water level and caused by wind, earthquakes or changes in

barometric pressure. A tsunami (from the Japanese language, roughly translated as "harbor wave") is an unusually large sea wave produced by seaquake or undersea volcanic eruption. According to the California Division of Mines and Geology, there are no active or potentially active faults of major historic significance within Madera County. As this property is not located near any bodies of water, no impacts are identified.

The flood hazard areas of the County of Madera are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare. These flood losses are caused by uses that are inadequately elevated, flood proofed, or protected from flood damage. The cumulative effect of obstruction in areas of special flood hazards which increase flood height and velocities also contribute to flood loss.

With mitigations, this impact will be maintained as less than significant.

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	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Responses:

(a, b) No Impact. No impacts identified as a result of this proposed project. The proposed project use is an appropriate request for the parcel(s) agricultural zone designation.

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	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Responses:

(a - b) No Impact. There are no known minerals in the vicinity of the project site.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XIII. NOISE 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 ordinances, 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?	☐	☐	☐	☒

Responses:

(a - b) Less Than Significant Impact. During construction phase, there will be a temporary increase in ambient noise produced on site. The noise generated by the power conversion devices and transformers is minimal, it will not increase above an ambient level outside the Project fence line. While this equipment will generate minimal noise, it will not be noticeable above background levels when standing outside the fence line of the project.

(c) No Impact. This project is not within proximity to an airstrip or airport. It is not within an airport/airspace overlay district. There will be no impacts as a result.

General Discussion

The Noise Element of the Madera County General Plan (Policy 7.A.5) provides that noise which will be created by new non-transportation noise sources shall be mitigated so as not to exceed the Noise Element noise level standards on lands designated for noise-sensitive uses. However, this policy does not apply to noise levels associated with agricultural operations. All the surrounding properties, while include some residential units, are designated and zoned for agricultural uses. This impact is therefore considered less than significant.

Construction noise typically occurs intermittently and varies depending upon the nature or phase of construction (e.g. demolition/land clearing, grading and excavation, erection). The United States Environmental Protection Agency has found that the average noise levels associated with construction activities typically range from approximately 76 dBA to 84 dBA Leq, with intermittent individual equipment noise levels ranging from approximately 75 dBA to more than 88 dBA for brief periods.

Short Term Noise

Noise from localized point sources (such as construction sites) typically decreases by approximately 6 dBA with each doubling of distance from source to receptor. Given the noise attenuation rate and assuming no noise shielding from either natural or human-made features (e.g. trees, buildings, and fences), outdoor receptors within approximately 400 feet of construction site could experience maximum noise levels of greater than 70 dBA when onsite construction-related noise levels exceed approximately 89 dBA at the project site boundary. Construction activities that occur during the more noise-sensitive eighteen hours could result in increased levels of annoyance and sleep disruption for occupants of nearby existing residential dwellings. As a result, noise-generating construction activities would be considered to have a potentially significant short-term impact. However with implementation of mitigation measures, this impact would be considered less than significant.

Long Term Noise

Mechanical building equipment (e.g. heating, ventilation and air conditioning systems, and boilers), associated with the proposed structures, could generate noise levels of approximately 90 dBA at 3 feet from the source. However, such mechanical equipment systems are typically shielded from direct public exposure and usually housed on rooftops, within equipment rooms, or within exterior enclosures.

Landscape maintenance equipment, such as leaf blowers and gasoline powered mowers, could result in intermittent noise levels that range from approximately 80 to 100 dBA at 3 feet, respectively. Based on an equipment noise level of 100 dBA, landscape maintenance equipment (assuming a noise attenuation rate of 6 dBA per doubling of distance from the source) may result in exterior noise levels of approximately 75 dBA at 50 feet.

MAXIMUM ALLOWABLE NOISE EXPOSURE FOR
NON-TRANSPORTATION NOISE SOURCES*

		Residential	Commercial	Industrial (L)	Industrial (H)	Agricultural
Residential	AM	50	60	55	60	60
	PM	45	55	50	55	55

Commercial	AM	60	60	60	65	60
	PM	55	55	55	60	55
Industrial (L)	AM	55	60	60	65	60
	PM	50	55	55	60	55
Industrial (H)	AM	60	65	65	70	65
	PM	55	60	60	65	60
Agricultural	AM	60	60	60	65	60
	PM	55	55	55	60	55

*As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers at the property line.

AM = 7:00 AM to 10:00 PM
PM = 10:00 PM to 7:00 AM
L = Light
H = Heavy

Note: Each of the noise levels specified above shall be lowered by 5 dB for pure tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g. caretaker dwellings).

Vibration perception threshold: The minimum ground or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observation of moving objects. The perception threshold shall be presumed to be a motion velocity of one-tenth (0.1) inches per second over the range of one to one hundred Hz.

Reaction of People and Damage to Buildings from Continuous Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006 to 0.019	Threshold of perception; possibility of intrusion	Damage of any type unlikely
0.08	Vibration readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Continuous vibration begins to annoy people	Virtually no risk of architectural damage to normal buildings
0.20	Vibration annoying to people in buildings	Risk of architectural damage to normal dwellings such as plastered walls or ceilings
0.4 to 0.6	Vibration considered unpleasant by people subjected to continuous vibrations vibration	Architectural damage and possibly minor structural damage

Source: Whiffen and Leonard 1971

With mitigations, this impact will be maintained as less than significant.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and business) 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?	☐	☐	☐	☒

Responses:

(a - c) No Impact. No impacts identified as a result of this project.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XV.PUBLIC SERVICES				
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:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☐	☒

iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Responses:

(a-i) Less Than Significant Impact. The Madera County Fire Department exists through a contract between Madera County and CalFire (California Department of Forestry and Fire Prevention) and operates six stations for County responses in addition to the state-funded CALFIRE stations for state responsibility areas. Under an "Amador Plan" contract, the County also funds the wintertime staffing of four fire seasonal CALFIRE stations. In addition, there are ten paid-call (volunteer) fire companies that operate from their own stations. The administrative, training, purchasing, warehouse, and other functions of the Department operate through a single management team with County Fire Administration.

The building construction will be governed by the requisite Building, Life, Safety and Fire Codes applicable at the time of construction. The mitigation tied to this finding is written in such a manner as to leave open as to what year the applicable codes will be enforced at the time of construction. This will ensure that the most current codes are followed instead of being tied to outdated codes.

(a - ii) No Impact. Crime and emergency response is provided by the Madera County Sherriff's Department. There will be an incidental need for law enforcement in the events of theft and vandalism on the project site.

A Federal Bureau of Investigations 2009 study suggests that there is on average of 2.7 law enforcement officials per 1,000 population for all reporting counties. The number for cities had an average of 1.7 law enforcement officials per 1,000 population.

(a-iii) No Impact. No impacts are anticipated as a result of this project as it does not relate to any educational programs, or increase the surrounding population.

Single Family Residences have the potential for adding to school populations. The average per Single Family Residence is:

Grade	Student Generation per Single Family Residence
K – 6	0.425
7 – 8	0.139
9 – 12	0.214

(a - iv) No Impact. No impacts are anticipated as a direct, indirect, short or long term impact as a result of this project.

The Madera County General Plan allocates three acres of park available land per 1,000 residents' population.

(a - v) No Impact. No impacts identified as a result of this project.

Crime and emergency response is provided by the Madera County Sherriff's Department.

There will be an incidental need for law enforcement in the events of theft and vandalism on the project site.

County Sherriff's Department personnel are strapped for resources as well. With new development, the potential for criminal activity (including but not limited to: home burglaries, assaults, auto thefts) increases.

Currently, the Madera County's Sherriff's Department provides law enforcement and patrols in the planning area, operating from substations in Oakhurst on Road 425B.

A Federal Bureau of Investigations 2009 study suggests that there is on average of 2.7 law enforcement officials per 1,000 population for all reporting counties. The number for cities had an average of 1.7 law enforcement officials per 1,000 population.

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	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XVI. RECREATION				
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?	☐	☐	☐	☒

Responses:

(a - b) No Impact. No impacts as a result of this project. The project does not include any recreational facilities.

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	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION 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?	☐	☐	☐	☒

Responses:

(a - b) No Impact. The proposed project is not anticipated to generate any additional traffic that could significantly impact the area. The project will be visited infrequently for routine maintenance. Access to the site is via Road 21.

In the area around the proposed project, opportunities for bicycles and pedestrians, especially as an alternative to the private automobile, are significantly limited by lack of developed shoulders, sidewalks or pavement width accommodating either mode. The condition is not uncommon in rural areas where distances between origins and destinations are long and the terrain is either rolling or mountainous. In the locations outside urbanized portions of the County, the number of non-recreational pedestrians/cyclists would likely be low, even if additional facilities were provided.

(c - d) No Impact. The proposed project does not propose any roadway changes or infrastructure.

As with most rural areas, Madera County is served by limited alternative transportation modes. Currently, only limited public transportation facilities or routes exist within the area. Volunteer systems such as the driver escort service, as well as the senior bus system, operate for special purpose activities and are administered by the Madera County Action Committee. The rural densities which are prevalent throughout the region have typically precluded successful public transit systems, which require more concentrated populations in order to gain sufficient ridership.

Local circulation is largely deficient with these same State Highways and County Roads

composing the only existing network of through streets. Most local streets are dead-end drives, many not conforming to current County improvement standards. Existing traffic, particularly during peak hour and key intersections, already exhibits congestion.

Madera County currently uses Level Of Service "D" as the threshold of significance level for roadway and intersection operations. The following charts show the significance of those levels.

Level of Service	Description	Average Control Delay (sec./car)
A	Little or no delay	0 – 10
B	Short traffic delay	>10 – 15
C	Medium traffic delay	> 15 – 25
D	Long traffic delay	> 25 – 35
E	Very long traffic delay	> 35 – 50
F	Excessive traffic delay	> 50

Unsignalized intersections.

Level of Service	Description	Average Control Delay (sec./car)
A	Uncongested operations, all queues clear in single cycle	< 10
B	Very light congestion, an occasional phase is fully utilized	>10 – 20
C	Light congestion; occasional queues on approach	> 20 – 35
D	Significant congestion on critical approaches, but intersection is functional. Vehicles required to wait through more than one cycle during short peaks. No long-standing queues formed.	> 35 – 55
E	Severe congestion with some long-standing queues on critical approaches. Traffic queues may block nearby intersection(s) upstream of critical approach(es)	> 55-80
F	Total breakdown, significant queuing	> 80

Signalized intersections.

Level of service	Freeways	Two-lane rural highway	Multi-lane rural highway	Expressway	Arterial	Collector
A	700	120	470	720	450	300
B	1,100	240	945	840	525	350
C	1,550	395	1,285	960	600	400
D	1,850	675	1,585	1,080	675	450
E	2,000	1,145	1,800	1,200	750	500

Capacity per hour per lane for various highway facilities

Madera County is predicted to experience significant population growth in the coming years (62.27 percent between 2008 and 2030). Accommodating this amount of growth presents a challenge for attaining and maintain air quality standards and for reducing greenhouse gas emissions. The increase in population is expected to be accompanied by a similar increase in vehicle miles traveled (VMT) (61.36 percent between 2008 and 2030).

Horizon Year	Total Population (thousands)	Employment (thousands)	Average Weekday VMT (millions)	Total Lane Miles
2010	175	49	5.4	2,157
2011	180	53	5.5	NA
2017	210	63	6.7	NA
2020	225	68	7.3	2,264
2030	281	85	8.8	2,277

Source: MCTC 2007 RTP

The above table displays the predicted increase in population and travel. The increase in the lane miles of roads that will serve the increase in VMT is estimated at 120 miles or 0.94 percent by 2030. This indicates that roadways in Madera County can be expected to become much more crowded than is currently experienced.

Emissions of CO (Carbon Monoxide) are the primarily mobile-source criteria pollutant of local concern. Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed and delay. Carbon monoxide transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. Under certain meteorological conditions, however, CO concentrations close to congested roadway or intersection may reach unhealthy levels, affecting local sensitive receptors (residents, school children, hospital patients, the elderly, etc.). As a result, the SJVAPCP recommends analysis of CO emissions of at a local rather than regional level. Local CO concentrations at intersections projected to operate at level of service (LOS) D or better do not typically exceed national or state ambient air quality standards. In addition, non-signalized intersections located within areas having relatively low background concentrations do not typically have sufficient traffic volumes to warrant analysis of local CO concentrations.

As this project is not within an airport/airspace overlay district, or in proximity to any airport or airstrip within the County, no impacts to airspace or air flight will occur as a result.

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	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES				
Would the project:				
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	☐	☐	☐	☒
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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

Responses:

(a - b) No Impact. No comments from local tribes were received for the project. A cultural resource inventory was conducted in which it was determined that the project area has a low sensitivity for buried cultural resources.

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	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒

b) 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 had 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?	☐	☐	☐	☒

Responses:

Water Quality Issues

Erosion and sedimentation/siltation are two potentially significant impacts related to development with the entire Oakhurst area. These impacts are generally proportional to the intensity of development which occurs in an area, including the amount of the clearing and grading which is necessary.

Rainfall is unable to percolate into the portions of each site that are paved over and is converted almost entirely into storm run-off, often exceeding the capacity of existing drainage system, causing intermittent flooding, increased flooding and other adverse impacts. Pollutants associated with parking lots (oil & grease predominately) will be found in high quantities after the first rain of the season. These pollutants have the potential of contaminating ground and surface water sources.

Groundwater availability issues

Groundwater within the area is generally limited and unpredictable as a result of geologic formation which characterizes the mountain and foothill regions of Madera County. These areas are generally underlain by impervious bedrock, and "groundwater" is available only through water bearing fractures within these formations. Within these "fracture" systems the ability to store and transmit water is solely dependent on the development of secondary openings such as faults, joints and exfoliation planes.

Due to these concerns regarding the uncertainty of groundwater, the Area Plan outlines the need to both understand groundwater availability for the area, and to examine opportunities to develop a source of surface water for the community. Several potential surface water sources for the greater eastern Madera County area have been evaluated over the years. Planning documents for the area beginning in the early 1960's identified the potential for a "Soquel" reservoir above Oakhurst within the Sierra National Forest. Later concepts included purchasing surface rights and delivering water from Bass Lake or the Fresno River. Most recently, the potential to purchase and deliver water from Redinger Lake has been studied. The development and implementation of a plan for surface water

source been hindered by the presence of existing commitments for all surface water in the area. Additionally, environmental clearances, technical requirements, and the costs associated with developing a surface water source are significant. Despite these hurdles, the Area Plan notes that a surface water source must be viewed as the long-term solution and includes as a policy the initiation of a study to examine opportunities for a surface water source. The following Area Plan policies are proposed to address issues related to the provision of water.

Wastewater Issues

The reliance on septic systems has generated concerns regarding potential impacts to both surface and ground water quality, particularly where septic systems are concentrated on individual lots. This project will have an on-site treatment facility.

Solid Waste Issues

According to the Madera County General Plan Background report, all solid waste generated in the unincorporated area is currently disposed of at the Fairmead Landfill, which is owned by the County and operated by Madera Disposal Systems, Inc. The landfill facility is located on 48 acres at the southeast corner of Road 19 and Avenue 22. The landfill is expected to reach capacity in 2020. If additional waste can be diverted, the life of the expansion area could be increased. There is the potential for approximately 28 residential units' total that would be in need of disposing of residential related waste material to this landfill. Recycling measures are strongly encouraged. According to the California Integrated Waste Management Board, the generation rate per resident is 0.63 pounds per day of trash.

(a-e) No Impact. No impacts have been identified because of this project.

General Discussion

Madera County has 34 County Service Areas and Maintenance Districts that together operate 30 small water systems and 16 sewer systems. Fourteen of these special districts are located in the Valley Floor, and the remaining 20 special districts are in the Foothills and Mountains. MD-1 Hidden Lakes, Bass Lake (SA-2B and SA-2C) and SA-16 Sumner Hill have surface water treatment plants, with the remaining special districts relying solely on groundwater.

The major wastewater treatment plants in the County are operated in the incorporated cities of Madera and Chowchilla and the community of Oakhurst. These wastewater systems have been recently or are planned to be upgraded, increasing opportunities for use of recycled water. The cities of Madera and Chowchilla have adopted or are in the process of developing Urban Water Management Plans. Most of the irrigation and water districts have individual groundwater management plans. All of these agencies engage in some form of groundwater recharge and management.

Groundwater provides almost the entire urban and rural water use and about 75 percent of the agricultural water use in the Valley Floor. The remaining water demand is met with surface water. Almost all of the water use in the Foothills and Mountains is from groundwater with only three small water treatment plants relying on surface water from the San Joaquin River and its tributaries.

In areas of higher precipitation (Oakhurst, North Fork, and the topographically higher part of the Coarsegold Area), groundwater recharge is adequate for existing uses. However, some problems have been encountered in parts of these areas due to well interference and

groundwater quality issues. In areas of lower precipitation (Raymond-Hensley Lake and the lower part of the Coarsegold area), groundwater recharge is more limited, possibly requiring additional water supply from other sources to support future development.

Madera County is served by a solid waste facility (landfill) in Fairmead. There is a transfer station in North Fork. The Fairmead facility also provides for Household Hazardous Materials collections on Saturdays. The unincorporated portion of the County is served by Red Rock Environmental Group. Above the 1000 foot elevation, residents are served by EMADCO services for solid waste pick-up.

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	Less Than Significant Impact	No Impact
XX. WILDFIRE 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?	☐	☐	☐	☒

Responses:
(a-d) No Impact. No impacts identified because of this project.

XIX. MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	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 significant 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?	☐	☐	☒	☐

Responses:

CEQA defines three types of impacts or effects:

- Direct impacts are caused by a project and occur at the same time and place (CEQA §15358(a)(1).

- Indirect or secondary impacts are reasonably foreseeable and are caused by a project but occur at a different time or place. They may include growth inducing effects and other effects related to changes in the pattern of land use, population density or growth rate and related effects on air, water and other natural systems, including ecosystems (CEQA §15358(a)(2).

- Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or

increase other environmental impacts (CEQA §15355(b)). Impacts from individual projects may be considered minor, but considered retroactively with other projects over a period of time, those impacts could be significant, especially where listed or sensitive species are involved.

(a - c) Less Than Significant Impact. While there have been some minimal impacts identified through this study, none are considered significant in and of themselves, and/or cumulative inducing enough to be considered significant. With appropriate mitigations, those impacts can be reduced to less than significant or not significant.

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Mitigation Measures

See attached.

Bibliography

RPCA Avenue 26 Solar Cultural Resources Inventory – Kleinfelder

RPCA Avenue 26 Solar Health & Safety Report - Barrett Energy Resources Group

RPCA Avenue 26 Solar Project Biological Resources Assessment – Kleinfelder

RPCA Avenue 26 Solar Glare Study - Barrett Energy Resources Group

Solar FAA Determination of No Hazard

California Department of Finance

California Department of Transportation (CALTRANS)

California Integrated Waste Management Board

California Environmental Quality Act Guidelines

United States Environmental Protection Agency

Caltrans website http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm accessed October 31, 2008

California Department of Fish and Wildlife "California Natural Diversity Database" https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data#43018410-cnddb-quickview-tool

Madera County Airport Land Use Compatibility Plan

Madera County Dairy Standards Environmental Impact Report

Madera County General Plan

Madera County Integrated Regional Water Management Plan

Madera County Department of Environmental Health

Madera County Fire Marshall's Office

Madera County Department of Public Works

Madera County Roads Department

State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011 and 2012, with 2010 Benchmark*. Sacramento, California, May 2012

MITIGATED NEGATIVE DECLARATION MND 2022-14

RE: RPCS Solar 1 LLC – Conditional Use Permit #2022-013

LOCATION AND DESCRIPTION OF PROJECT:

The subject property is located on the south side of Avenue 26 approximately 3/4 mile west of its intersection with Road 21 (no situs) Chowchilla. The project is a request for a Conditional Use Permit to develop and construct an approximately 8MWac solar photo-voltaic energy generating facility on approximately 49-acres of a 319-acre parcel. The Project will be constructed in two phases and will interconnect to a PG&E preexisting electrical distribution system.

ENVIRONMENTAL IMPACT:

No adverse environmental impact is anticipated from this project. The following mitigation measures are included to avoid any potential impacts.

BASIS FOR NEGATIVE DECLARATION:

1. Please see attached Mitigation Monitoring Report.

Madera County Environmental Committee

A copy of the negative declaration and all supporting documentation is available for review at the Madera County Community & Economic Development Department - Planning Division, 200 West 4th Street, Ste. #3100, Madera, California.

DATED: August 17, 2022

FILED:

PROJECT APPROVED:

MITIGATION MONITORING REPORT

MND # 2022-14

No.	Mitigation Measure	Monitoring Phase	Enforcement Agency	Monitoring Agency	Action Indicating Compliance	Verification of Compliance		
						Initials	Date	Remarks
Aesthetics								
Agricultural Resources								
Air Quality								
	No idling of vehicles longer than 10 minutes							
Biological Resources								
	A nesting bird survey shall be performed by a qualified biologist no earlier than one week prior to any construction during the nesting season (March 1 – August 31) to determine if any native birds are nesting on or near the site (including a 100-foot buffer for raptors). If any active nests are observed during surveys, a suitable avoidance buffer from the nests should be determined by the qualified biologist based on species, location, and extent and type of planned construction activity. These nests would be avoided until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist and removal of any suitable nesting habitat (i.e., trees and vegetation) outside of the bird breeding season to avoid impacts to nesting birds.	Prior to Construction	Madera County Planning Division	Madera County Planning Division				
	Prior to the start of construction, a qualified biologist shall check each barn owl nest box within 150 feet of the Project disturbance area to determine if they are actively being used by barn owls for nesting. Any active nest boxes will be flagged with a 150-foot buffer for avoidance during Project construction. All inactive nest boxes will be removed within 24 hours of the survey to ensure no impacts to barn owls will occur under the Project. All nest boxes will be mapped and recorded; the locations of inactive nest boxes will be transmitted to the Project proponent in order to facilitate removal or relocation of the boxes.	Prior to Construction	Madera County Planning Division	Madera County Planning Division				

No.	Mitigation Measure	Monitoring Phase	Enforcement Agency	Monitoring Agency	Action Indicating Compliance	Verification of Compliance		
						Initials	Date	Remarks
	Impacts to special-status species due to increased predation from construction activities could be considered a significant impact in the context of CEQA. All trash and waste items generated by construction or crew activities should be properly contained in a covered trash receptacle and removed from the Project Site daily or secured nightly in a locked trash receptacle. This includes biodegradable items, such as apple cores and banana peels, that attract predators such as raccoons and American crows that could prey upon sensitive wildlife species.	Construction	Madera County Planning Division	Madera County Planning Division				
	Impacts to monarch butterfly eggs, larvae, or adults due to Project construction could be considered significant in the context of the FESA. Prior to construction, all milkweed plants within the disturbance footprint should be flagged and mapped by a qualified botanist with a mobile data collection device. These plants should be protected with high visibility fencing and avoided during construction with a 15-foot buffer wherever possible. Any plants that cannot be avoided during construction will be counted and recorded and the Project proponent will mitigate for the loss of milkweed plants by planting a native seed mix that includes native milkweed species (Asclepias californica, A. cordifolia, A. eriocarpa, A. fascicularis, or A. vestita) in open areas disturbed by the Project. For each plant directly impacted by the project (e.g., removed by trenching, grading, or paving), at least 100 square feet of disturbed area will be seeded at a rate of no less than 1 pound pure live seed (PLS) per acre. Seeds will be sourced from as close to the Project Area as possible (either collected directly from impacted plants if possible or sourced from a commercial seed supplier from the County or as near to the County as available). The maximum acreage of the seeded area should not exceed the temporary disturbance area of the Project .	Prior to Construction	Madera County Planning Division	Madera County Planning Division				

No.	Mitigation Measure	Monitoring Phase	Enforcement Agency	Monitoring Agency	Action Indicating Compliance	Verification of Compliance		
						Initials	Date	Remarks
	All Project personnel will visually check for animals in any pipes, culverts, or other open-ended materials and equipment stored on site for one or more overnight periods prior to moving, burying, or capping to ensure that no animals are present within the materials and equipment. To prevent accidental entrapment of wildlife during construction, all excavated holes, ditches, or trenches greater than six (6) inches deep will be covered at the end of each workday by suitable materials that cannot be displaced or escape ramps will be placed in excavations. After opening and before filling, such holes, ditches, and trenches will be thoroughly inspected for trapped animals.	Construction	Madera County Planning Division	Madera County Planning Division				
Cultural Resources								
	In the event archaeological resources are encountered during any ground-disturbing activities associated with the Project, then all ground-disturbing work at the location, plus within a reasonable buffer zone, must be immediately suspended. The Madera County Department shall be contacted, and a qualified professional archaeologist retained to analyze the significance of the find and formulate further mitigation (e.g., Project relocation, excavation plan, and protective cover) in consultation with culturally affiliated tribes or other descendant groups, where applicable.	Construction	Madera County Planning Division	Madera County Planning Division				
	Pursuant to California Health and Safety Code §7050.5, if known or suspected Native American or other human remains are encountered, all ground-disturbing work must cease in the vicinity of the discovery, and the County Coroner contacted. The respectful treatment and disposition of remains and associated grave offerings shall be in accordance with PRC §5097.98. The applicant and successors in interest are ultimately responsible for ensuring compliance with this condition.	Pre-construction	Madera County Planning Division	Madera County Planning Division				
	If any prehistoric resources or human remains are uncovered during construction, work shall stop immediately and a qualified archeologist shall be contacted to determine further mitigation which may be needed. The County Coroner shall be contacted if human remains are found.	Construction	Madera County Planning Division	Madera County Planning Division				
Geology and Soils								
	Construct and maintain the site so as to minimize erosion during rainfall events.	Construction						

No.	Mitigation Measure	Monitoring Phase	Enforcement Agency	Monitoring Agency	Action Indicating Compliance	Verification of Compliance		
						Initials	Date	Remarks
Hazards and Hazardous Materials								
Hydrology and Water Quality								
Land Use and Planning								
Mineral Resources								
Noise								
Population and Housing								
Public Services								
Recreation								
Transportation and Traffic								
Utilities and Service Systems								