SAN JOAQUIN COUNTY
Community Development Department

Community Development Department
Planning · Building · Code Enforcement · Fire Prevention

Jennifer Jolley, Director

Eric Merlo, Assistant Director
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Jeff Niemeyer, Deputy Director of Building Inspection

MITIGATED NEGATIVE DECLARATION

TO: ☒ Office of Planning & Research
P. O. Box 3044
Sacramento, CA 95812-3044

☒ County Clerk, County of San Joaquin

FROM: San Joaquin County
Community Development Department
1810 East Hazelton Avenue
Stockton, CA 95205

PROJECT TITLE: Conditional Use Permit No. PA-2500218

PROJECT LOCATION: The project site is on the northeast corner of East Comstock Road and North Duncan Road, Linden, San Joaquin County. (APN/Address: 091-170-06 / 18133 E Comstock Rd, Linden) (Supervisorial District: 4)

PROJECT DESCRIPTION: A Conditional Use Permit application for 14.5-acre ground-mounted photovoltaic energy facility. The project will generate up to 3 megawatts of solar energy utilizing photovoltaic solar modules, inverters, and appurtenant electrical equipment and distribute the useable energy to the electric grid. The modules will be mounted on a steel racking system employing single-axis tracker technology that efficiently tracks the sun's movement throughout the day and maximizes the efficiency of solar collection. The rows of modules will be anchored in the ground using driven piers, and the overall height of the array is not expected to exceed 15 feet above the existing ground surface at maximum tilt. The Project will interconnect to the existing Pacific, Gas, and Electric electrical distribution system adjacent to the site along East Comstock Road.

The Property is zoned AG-40 (General Agriculture, 40-acre minimum) and the General Plan designation is A/G (General Agriculture).

PROPONENT: Louis & Jeanette Barbagelata TR / Renewable Properties

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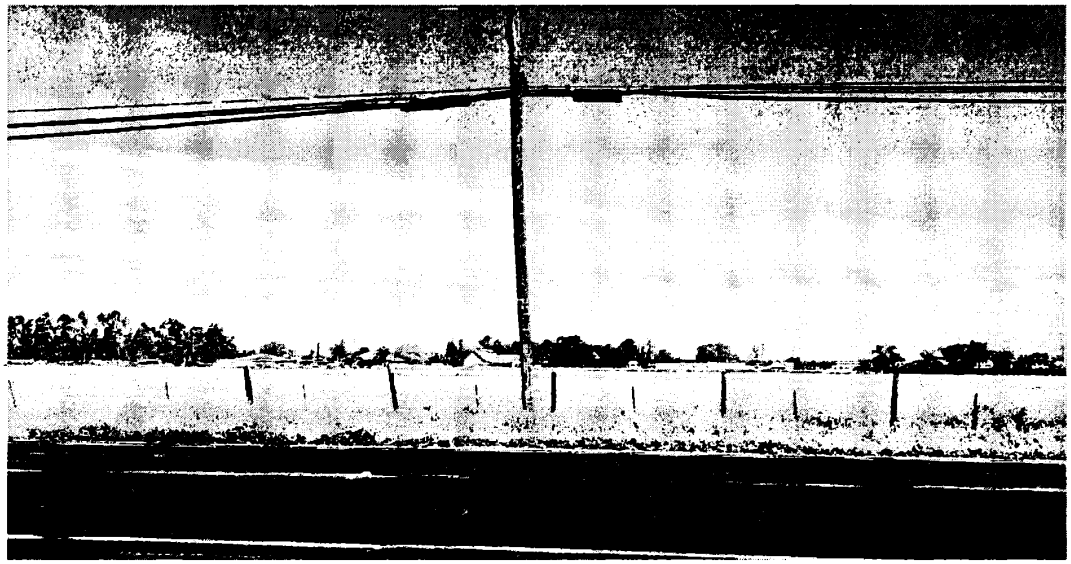
This is a Notice of Intent to adopt a Mitigated Negative Declaration for this project as described. San Joaquin County has determined that through the Initial Study that contains proposed mitigation measures all potentially significant effects on the environment can be reduced to a less than significant level. The Mitigated Negative Declaration and Initial Study can be viewed on the Community Development Department website at www.sjgov.org/commdev under Active Planning Applications.

Date: August 14, 2026

Contact Person:
Jessica Leal Phone: (209) 468-3140 Fax: (209) 468-3163 Email: jleal@sjgov.org

Filed Doc #: 39-08172026-243
Mon Aug 17 11:14:10 PDT 2026
Page: 1 of 267 Fee: $0.00
Steve J. Bestolarides
San Joaquin County Clerk

By Deputy: aambriz



Duncan Road Solar Project, PA-2500218 (C)

Draft Initial Study – Mitigated Negative Declaration

prepared by

San Joaquin County
Community Development Department
1810 East Hazelton Avenue
Stockton, California 95205
Contact: Jessica Leal, Associate Planner

prepared with the assistance of

Rincon Consultants
601 University Avenue #221
Sacramento, California 95825

August 2026

RINCON
CONSULTANTS

Table of Contents

Tables

Figures

Appendices

Initial Study

1. Project Title

Duncan Road Solar Project - PA-2500218 (C)

2. Lead Agency Name and Address

San Joaquin County
Community Development Department
1810 East Hazelton Avenue
Stockton, California 95205

3. Contact Person and Phone Number

Jessica Leal, Associate Planner
Community Development Department
1810 East Hazelton Avenue
Stockton, California 95205
209-468-3140

4. Project Location

The Project would be located on approximately 15.2 acres of an overall 20.4-acre privately owned tract of land (Assessor's Parcel Number: 091-170-060) approximately nine miles east of the City of Stockton in unincorporated San Joaquin County (Project Site). The Project Site abuts Duncan Road to the west and East Comstock Road to the south.

The Project Site is 1.7 miles north of State Route 26 and five miles east of State Route 88. The site is approximately 1.3 miles from Linden, a census designated place in San Joaquin County. The Calaveras River, which flows throughout San Joaquin County is approximately 450 feet northeast of the Project Site. The location of the Project Site is shown in Figure 1 and Figure 2.

The Project Site is within the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). The SJMSCP is a comprehensive conservation planning strategy that addresses the needs of multiple plant and animal species while protecting the region's agricultural interests as the population increases over the next 25 years (2001–2051). The SJMSCP is administered by the San Joaquin Council of Governments, Inc., which is a non-profit corporation established by San Joaquin County and the cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton and Tracy. The SJMSCP provides coverage for impacts to biological resources pursuant to the California Environmental Quality Act (CEQA), the California Endangered Species Act (CESA), and Federal Endangered Species Act (ESA), and is approved and authorized by the California Department of Fish and Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS). The Project sponsor has opted into the SJMSCP and therefore would implement all applicable incidental take permit minimization measures included therein. These would be included as conditions of the Conditional Use Permit.

Figure 1 Regional Project Location

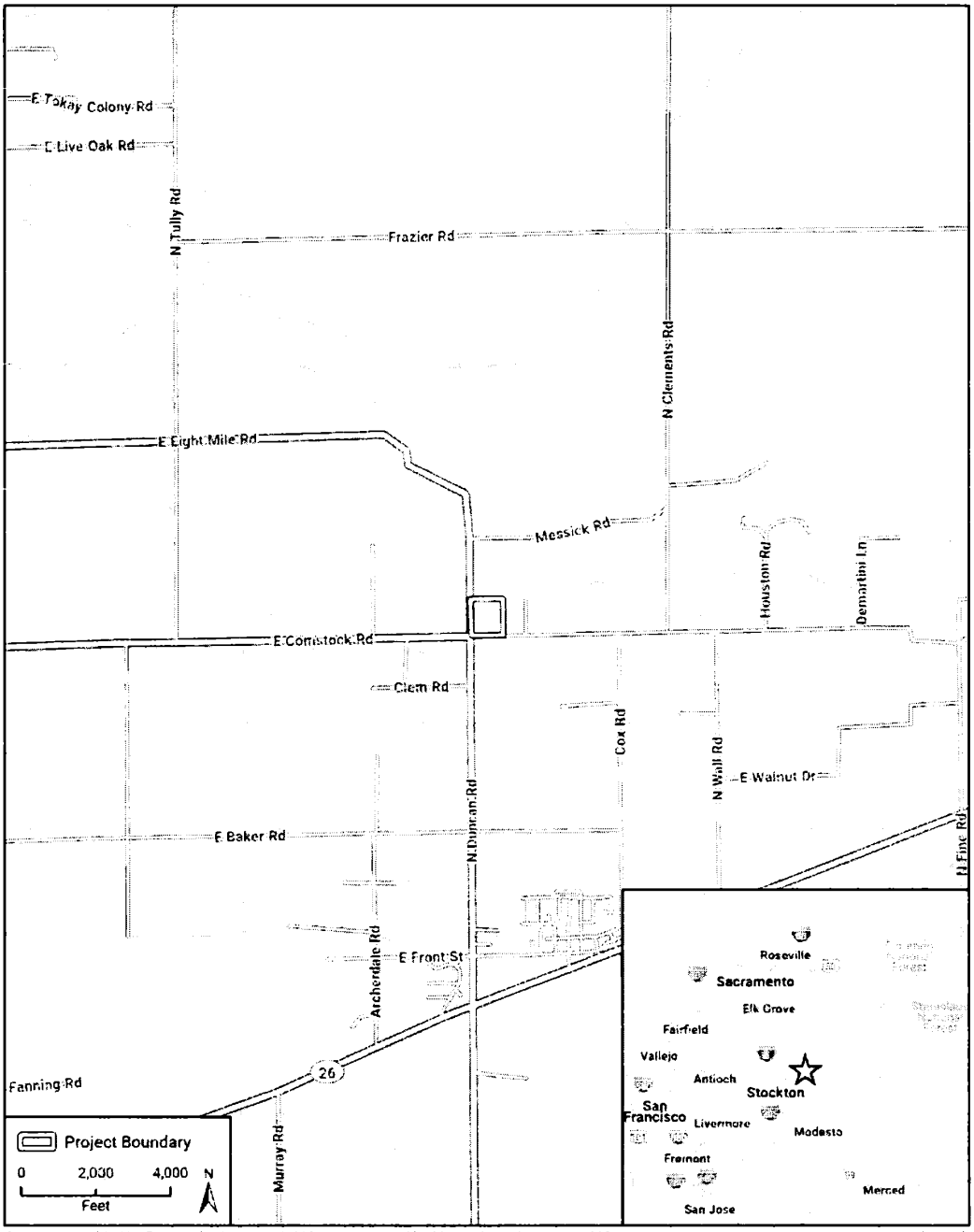


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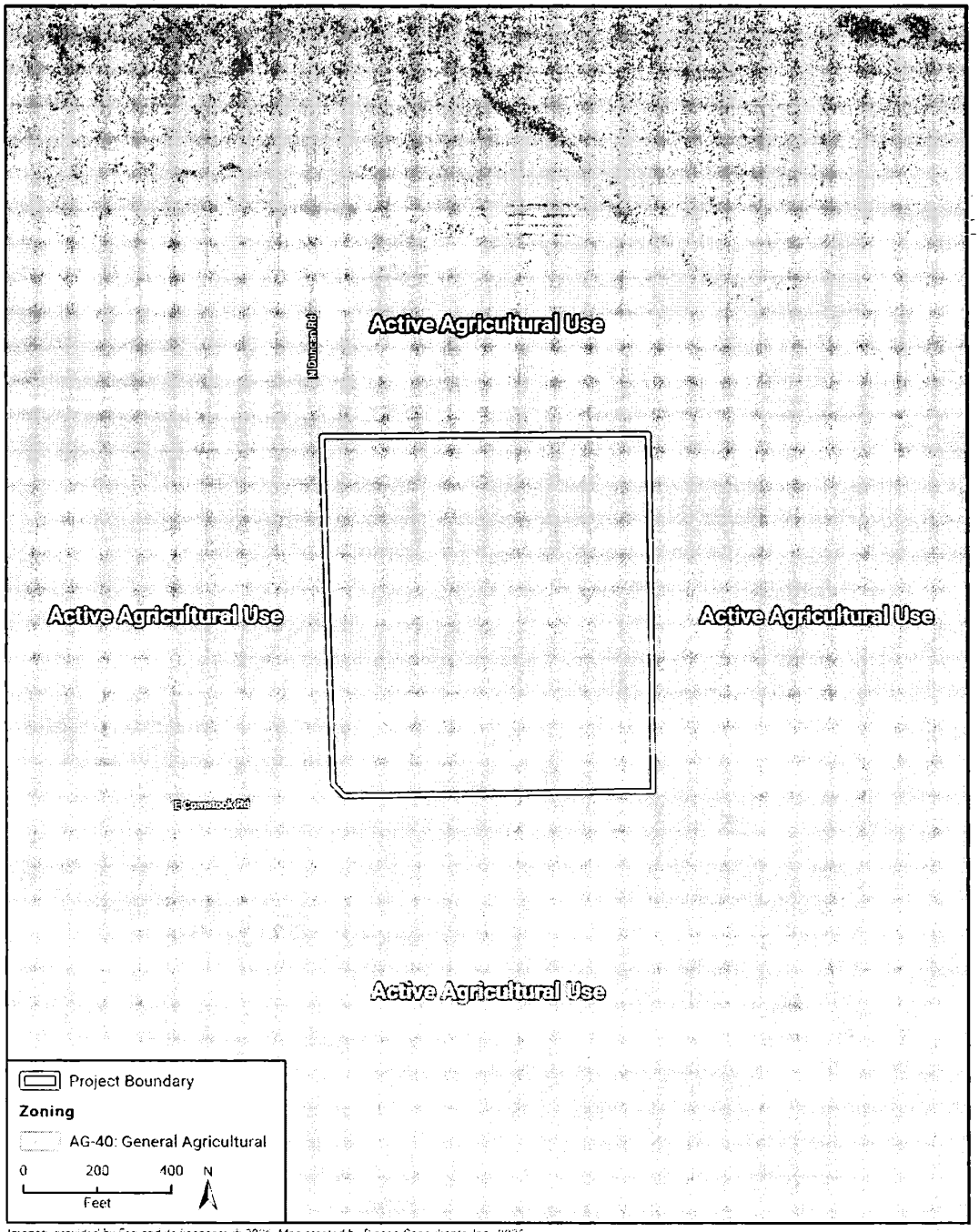
Figure 2 Project Site



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5. Project Sponsor's Name and Address

RPCA Solar 11, LLC
Ryan Nyberg, Senior Permitting Manager
44 Montgomery Street, Suite 3150
San Francisco, CA 94104

6. General Plan Designation

The Project Site has a land use designation of General Agriculture (A/G) (San Joaquin County 2025).

7. Zoning

The Project Site is zoned AG-40 (General Agriculture, 40-acre minimum).

8. Description of Project

RPCA Solar 11 LLC (Project sponsor) proposes to construct, operate, maintain, and decommission a ground-mounted solar photovoltaic (PV) energy generation facility and associated equipment and infrastructure (Duncan Road Solar Project or Project). Once constructed, the Project would generate approximately 3 megawatts (MW) of solar energy by utilizing PV solar modules, inverters, and appurtenant electrical equipment to convert the sun's energy to usable power distributed to the electrical grid. The Project meets the San Joaquin County (County) definition of a Solar Energy System, which according to Chapter 9-203.020 of the San Joaquin County Code, is an allowed use on this site subject to a Conditional Use Permit in compliance with Chapter 9-804.

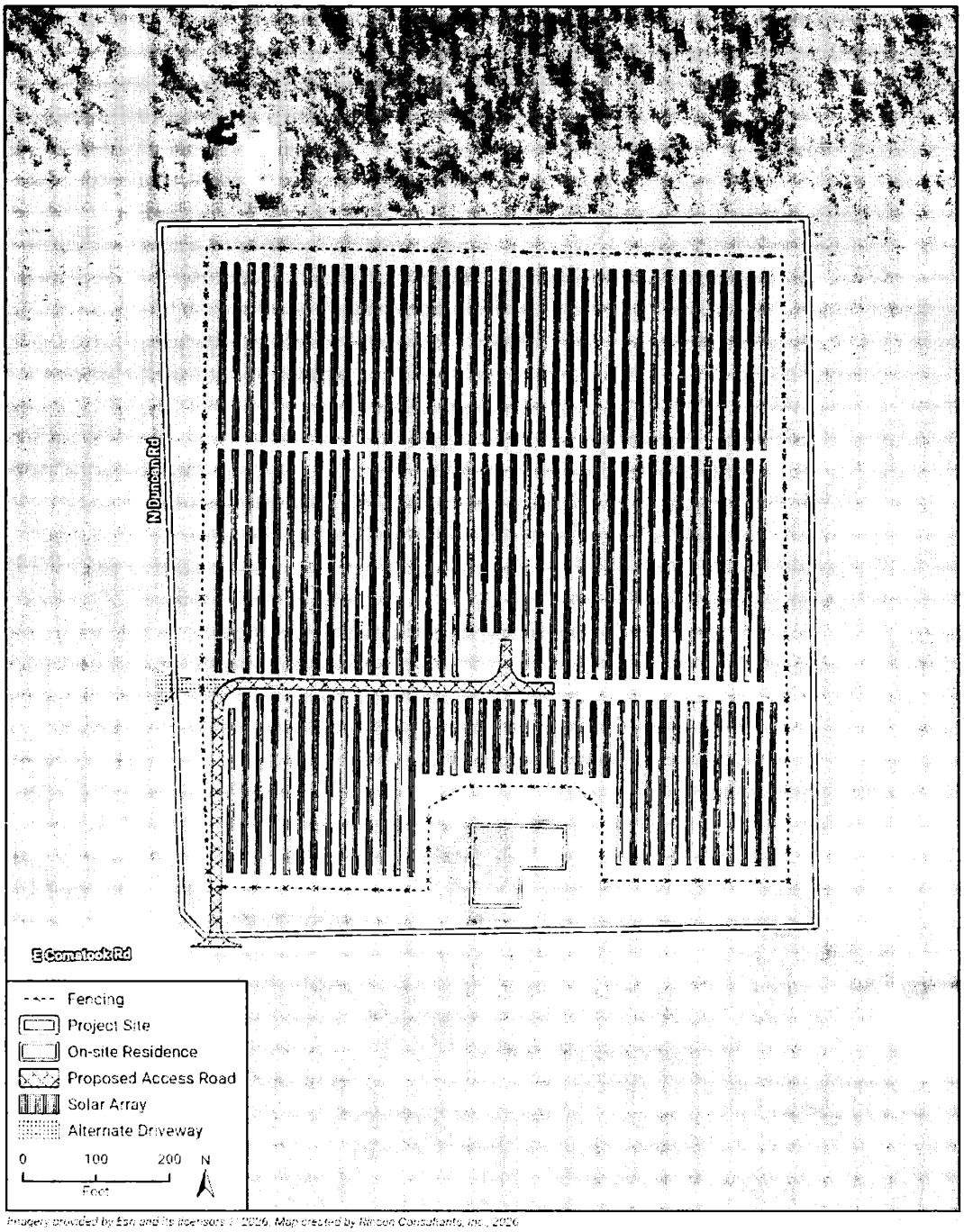
Descriptions of the major Project components are provided below.

Photovoltaic Modules and Arrays

The Project would use solar PV technology that converts the sun's light energy into direct current (DC) electrical energy within the PV solar panels, referred to as "modules." Modules consist of photovoltaic cells (typically silicon) encapsulated between protective layers of glass and back sheet material; all housed within an aluminum frame. The PV modules installed would have an anti-reflective coating on the glass. The PV modules can be mounted together in different configurations or arrays, depending on the equipment selected and on a common support framework.

The Project would include approximately 7,190 solar modules (each measuring approximately 4 feet x 7.5 feet), which would be mounted on a steel racking system employing single-axis tracker technology that efficiently tracks the sun's movement throughout the day and maximizes the efficiency of solar collection. The rows of modules would be anchored in the ground using driven piers. For maximum efficiency, panels are typically installed between 12 and 24 inches off the ground when at their lowest point, which would result in a height of approximately 9 feet from ground level. However, engineering constraints and/or topography may require an increase in height for some panels; therefore, it is assumed that panels may be approximately 10 to 15 feet to the top from ground level once installed. The arrays would be arranged in a north to south orientation with approximately nine feet of spacing between each row. Because solar energy technologies continue to evolve at a rapid rate, the exact arrangement and specifications of the PV systems would be determined during the final design. The solar arrays would be set back 30 feet from the property line, 54 feet from an existing off-site residence, and 50 feet from the public right of way. The solar arrays would also be set back 50 feet from the existing on site residence. The solar arrays would be set back at least five feet from the existing agricultural well and septic system on site. Figure 3 shows the Project Site plan.

Figure 3 Site Plan



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Inverter Stations

The DC output from the PV arrays would be transmitted to inverters through a combination of aboveground and underground DC electrical cables. The inverter stations (ranging from 250-350 kilovolt) are where the energy is converted to alternating current (AC) and then transmitted to a medium-voltage transformer. The stations consist of DC collection equipment, and utility-scale string inverters. The number of modules connected to each inverter would depend on the specific model of modules, inverters, and their capacities, which would be determined in the final design.

Electrical Collection System

Power from the inverter stations would be transmitted to a medium voltage transformer where the power would be stepped up to 12 kilovolts and transferred to the existing Pacific Gas and Electric (PG&E) electrical distribution system that is located in the public right of way along East Comstock Road via an underground medium voltage electrical collection line and pole mounted infrastructure. The medium voltage collection line would be buried in approximately 5-foot-deep trenches and would run adjacent to the Project's site access road along East Comstock Road. The point of interconnection to the existing PG&E electrical distribution system would be via pole mounted infrastructure and an approximately 31-foot overhead wiretap to the existing 12 kilovolt transmission line adjacent to the site along East Comstock Road. The line tap would occur within the public right-of-way, and all other Project work would occur on site. This work would require similar equipment and intensity of construction activities as the rest of the Project. It would require no ground disturbance outside of the Project Site. Therefore, activities associated with the point of interconnection are analyzed as part of construction impacts throughout this document.

Ancillary Facilities

Site Access

The Project would include a new gravel access road and an improved driveway access for ingress and egress to the Project Site, which would provide access from either Duncan Road or East Comstock Road in accordance with County Fire Department Requirements. New access roads and site access improvements would require surfacing and asphalt concrete work. There would be a locked gate that would provide access to the Project Site with one remotely operated security camera.

Perimeter Fence

The perimeter of the Project's solar arrays would be permanently fenced to restrict public access during construction and operations. The fence posts would be set in concrete or driven into the ground, and the chain-link fence would be installed to the ground. The chain-link fence would be 6 feet tall with an additional 1 foot of security wiring mounted on top.

Monitoring Systems

The Project would include a solar meteorological station,[1] supervisory control and data acquisition system,[2] and telecommunications system that would be skid mounted in the center of the site. The meteorological station and associated camera would be mounted on a pole that is ten feet in height.

[1] Solar meteorological stations typically measure solar irradiance, ambient temperature, wind speed and direction, humidity, and other atmospheric parameters.

[2] A computer-based system used at a solar facility to monitor and control facility operations by collecting real-time data from solar panels, inverters, weather stations, and electrical equipment, and enabling operators to remotely oversee performance, respond to alarms, and optimize energy generation.

Lighting

The Project may require minimal nighttime lighting near the transformer, which would be down shielded, if nighttime lighting is required.

Screening Buffer

The Project has requested a variance to provide relief from Section 9-409.430(b)(10) of the San Joaquin County Code, which requires utility-scale solar energy systems to provide a 10-foot wide landscape buffer along any facility fencing and between such fencing and the public right-of-way and adjacent residential and agricultural uses. The Project proposes to provide visual screening through the Project's perimeter fence, which will be designed with privacy slats or agricultural-style materials. If the Project is required to provide a landscape buffer, it would be designed to incorporate native or naturalized plant species, requiring minimal water once they are established..

Other

The Project does not include on-site restroom facilities because there would be no occupied facilities or permanent on-site personnel. No new water or wastewater facilities would be constructed as part of the Project. Additionally, in accordance with San Joaquin County Code Section 9-409.430(b)(7), the Project would include creation and implementation of a fire prevention plan.

Construction

It is estimated that construction of the facility would take six (6) months to complete with a workforce of 5 to 50 workers, depending on the phase. The average number of workers on site during construction would be 15 individuals.

Ground-disturbing activities associated with Project construction include site preparation, surface grading for the access road, trenching for the underground medium voltage utility line, installation of solar panel pile mounts, and installation of fencing. Trenching on site would be at a maximum depth of 5 feet and 3 feet wide. Construction would not require export of soil as all soil would be used to backfill on site. Limited import of soil may be needed for trench backfill if existing soil is not sufficient.

The solar PV modules would be manufactured at an off-site location and transported to the Project Site via truck. It is estimated there would be a maximum of 104 daily construction vehicle trips and construction traffic would likely use Duncan or Comstock Road to get to and from the Project Site. Construction worker parking and construction staging would be on site. Project construction would not require roadway or lane closures.

During construction, restroom facilities would be provided by portable units to be serviced by licensed providers.

A small amount of solid waste would be produced from Project construction activities. This may include paper, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, empty nonhazardous containers, and vegetation waste. Waste would be segregated, where practical, for recycling. Non-recyclable wastes would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill. The nearest Class III landfill is Foothill Sanitary Landfill, located approximately 8.5 miles east of the Project Site.

Small quantities of hazardous wastes, which would be typical for most construction projects of this type, would likely be generated over the course of construction. These wastes may include waste paint, spent construction solvents, waste cleaners, waste oil, oily rags, waste batteries, and spent welding materials. Workers would be trained to properly identify and handle all hazardous materials. Hazardous waste would be either recycled or disposed of at a permitted and licensed treatment or disposal facility. All hazardous waste shipped offsite for recycling or disposal would be transported by a licensed and permitted hazardous waste hauler and disposed of at an approved location.

Operation

The Project is expected to be commercially operational in June 2027. Power generated by the Project would be sold to PG&E through their Renewable Market Adjusting Tariff program. Hours of operation for solar generation would be expected to span from 5:30 A.M. to 8:30 P.M. seven days per week under the most ideal conditions (i.e. sunny conditions).

Once constructed, the Project would require minimal regularly planned maintenance and would be operated remotely. An average of 20 annual operations and maintenance visits are expected for the Project, typically involving two employees traveling to and from the Project Site in one light to medium duty truck. Included in the annual operational trip estimation, two panel washings per year are expected, each involving two light- to medium-duty trucks, four employees, and a water buffalo. Panel washing activities are expected to generate an annual water demand of 65,000 gallons per year. Water for panel washing would be obtained from a commercially available source. Vegetation on site would be mowed periodically and managed in accordance with the California Fire Code.

The Project would produce a small amount of waste associated with maintenance activities, which could include broken and rusted metal, defective or malfunctioning modules, electrical materials, empty containers, and other miscellaneous solid waste, including the typical refuse generated by workers. Most of these materials would be collected and returned to the manufacturer or delivered to recyclers. Nonrecyclable waste would be removed on a regular basis by workers for disposal at a Class III landfill.

Decommissioning

The Project Site would be reclaimed and fully restored to original conditions upon the closure of the facility at the end of its anticipated 35-year life span, and Project infrastructure would be removed in compliance with San Joaquin County Code Section 9-409.430 (b)(2) which requires a decommissioning plan to be created and followed. Removal of Project infrastructure would be similar in process, scale, and duration to Project construction, excluding site preparation activities such as site clearing. Decommissioning would involve the removal of all above ground components and the removal of piers up to three feet below grade. Solar panels would be recycled to the extent feasible. Water demand for decommissioning would be similar to that of construction and would come from a commercially available source.

9. Surrounding Land Uses and Setting

As noted above, the Project would be located on approximately 15.2 acres of an overall 20.4-acre privately owned tract of land (Assessor's Parcel Number: 091-170-060) approximately nine miles east of the City of Stockton in unincorporated San Joaquin County. The Project Site is zoned as AG-40 (General Agriculture, 40-acre minimum)and has a land use designation of General Agriculture (A/G). The majority of the Project Site is disturbed and consists of non-native grasses and forbs. The Project Site was previously planted with a walnut orchard, which was removed by the landowner in July 2023 (Phase 1 ESA, June 2025). Since 2023, the Project Site has not been used for crops or agricultural uses. The site is relatively flat, with an elevation of 55 feet above sea level. The Project Site includes one dwelling unit and accessory structures that will not be demolished or altered by the Project. The residence on site would remain inhabited throughout Project construction and operation. The Project Site is classified as Prime Farmland on the California Department of Conservation's Farmland Mapping and Monitoring Program.

The Project is located in an area that is primarily agricultural in nature. The Project Site is surrounded on all sides by active agriculture, orchards, and associated residences. Existing sub-transmission lines travel along the northern side of East Comstock Road and the eastern side of Duncan Road, adjacent to the boundaries of the Project Site. Most of the residences in the surrounding area are naturally screened from the Project by their own agricultural uses.

10. Required Entitlements and Public Agencies Whose Approval is Required

- San Joaquin County Conditional Use Permit (CUP) and Variance (if needed)
- San Joaquin County Air Pollution Control District
- San Joaquin Council of Governments
- State Water Resources Control Board

At this time federal funds are not anticipated to be used for this Project but should they be in the future the Project would be subject to United States Department of Agriculture (USDA) approval.

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?

On October 23, 2025, San Joaquin County sent Assembly Bill (AB) 52 notification letters via certified mail to Native American tribes who requested notification under AB 52, including the California Native American Heritage Commission, California Tribal TANF Partnership, California Valley Miwok Tribe, North Valley Yokuts Tribe, United Auburn Indian Community, and Buena Vista Rancheria. Under AB 52, Native American tribes have 30 days to respond and request further Project information and request formal consultation. The County did not receive a request for formal consultation under AB 52.

Environmental Factors Potentially Affected

This Project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

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

Determination

Based on this initial evaluation:

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

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

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

☐ I find that the Project MAY have a "potentially significant impact" or "less than significant with mitigation incorporated" 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 Project could have a significant effect on the environment, because all potential 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 Project, nothing further is required.

Jessica Leal
Signature

8/14/24
Date

Jessica Leal
Printed Name

Associate Planner
Title

Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the Project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	■
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	■
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a 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 that would adversely affect daytime or nighttime views in the area?	☐	☐	☐	■

a. Would the Project have a substantial adverse effect on a scenic vista?

A scenic vista is generally defined as a view from a public place that is expansive and considered by the County to be important. It can be seen from an elevated position or from a roadway with a longer-range view of the landscape.

The San Joaquin County General Plan states that views of the Delta, agriculturally rich valley floor, and Coast Ranges and Sierra Nevada mountains serve as the primary scenic resources within the county (San Joaquin County 2016). Views of the Sierra Nevada mountains through the Project Site are obscured due to intervening vegetation from existing orchards located adjacent to the Project Site to the east. Further, due to distance, atmospheric haze, and existing orchards directly to the west, views of the Delta and the Coast Ranges are completely obscured from the Project Site. There are no expansive views of agricultural resources in the Project vicinity due to the intervening vegetation and orchards. In addition, there are no scenic vistas through the Project Site. Therefore, the Project would not have a substantial adverse effect on a scenic vista. No impact related to scenic vistas would occur.

NO IMPACT

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

According to the California Department of Transportation State Scenic Highway System Map, there are no State-designated scenic highways in the vicinity of the Project Site. The nearest eligible scenic highway is Route 49, located approximately 24 miles northeast of the Project Site, and the nearest designated scenic highway is Route 160, located approximately 28 miles northwest of the Project Site (California Department of Transportation 2018). These portions of Route 49 and Route 160 are not visible from the Project Site due to distance and existing intervening vegetation and development. Furthermore, the

Project Site has historically been used for agricultural production and is currently disturbed and undeveloped. The Project would not include the removal of existing trees, and there are no rock outcroppings or historic buildings on the Project Site. Therefore, the Project would not result in damage to scenic resources within a State Scenic Highway. The nearest locally designated scenic roadways are N. Clements Road which is approximately 0.84 miles to the east of the Project site and SR 26 which is approximately 2.8 miles southeast of the Project site (San Joaquin County 2016). Due to intervening landscaping, including street trees and orchards, the site is not visible from N. Clements Road. Additionally, due to distance and intervening landscaping, the site is not visible from SR 26. Therefore, no impact related to scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a designated, or eligible state scenic highway or locally designated scenic roadway would occur.

NO IMPACT

c. *Would the Project, 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 a publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?*

The Project Site is in a non-urbanized area;[3] therefore, this discussion analyzes the Project's potential to substantially degrade the existing visual character or quality of public views of the Project Site and its surroundings.

The Project Site is a fallow field surrounded by active orchards in all directions. The Project involves the construction and operation of a ground-mounted solar energy generation facility, which would interconnect to the existing PG&E electrical distribution system adjacent to the Project Site along E. Comstock Road. Under present conditions, the Project Site is largely obscured from public view by surrounding vegetation and agricultural uses (e.g., orchards). Public views of the Project Site are limited to those of motorists traveling along E. Comstock Road or N. Duncan Road, lasting for only approximately 1,000 feet as these public roadways border the Project Site boundaries. The Project would include fences and adequate screening buffer which would consist of privacy slats. If required, the screening buffer would generally blend with the existing agricultural uses and infrastructure in the surrounding area, reducing potential for visual contrast.

While the Project would introduce a low degree of change in local visual quality (from fallow field to screening buffer), given the low-to-moderate visual sensitivity of motorists traveling along the roads and short duration, impacts to visual character and quality from this vantage point would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

d. *Would the Project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?*

Due to the rural nature of the area around the Project Site, existing light and glare in the area is minimal with most light and glare coming from existing residences or cars travelling on adjacent roads including East Comstock Road and Duncan Road. Construction and future decommissioning of the Project would occur during daylight hours and would not require lighting. During operation, the Project may require minimal nighttime lighting near the transformer. If nighttime lighting is required, this lighting would be down shielded resulting in no light spillover beyond the Project boundaries in compliance with Section 9-403.050 of the San Joaquin County Code. The proposed screening buffer, which would consist of privacy slats, would further ensure no light spillover beyond the Project boundaries. Therefore, the Project would

[3] California Public Resources Code Section 21071 defines an unincorporated area as an "Urbanized area" only when the area is completely surrounded by one or more incorporated cities, or located within an urban growth boundary and has an existing residential population of at least 5,000 persons per square mile. The nearest city to the Project Site is Stockton which does not surround the Project Site. The site is also not within the City's sphere of influence (San Joaquin LAFCO 2022).

not create a new source of substantial light that would adversely affect daytime or nighttime views in the area and no impact would occur.

Solar PV generation systems are inherently designed to absorb rather than reflect solar rays. Further, the solar modules used for the Project have an anti-reflective coating that would limit the potential to cause glare. This would ensure the Project would not introduce new sources of substantial glare. In addition, as discussed above, Project design would include screening around all sides of the Project comprised of either landscaping or privacy slats, which would further shield nearby motorists and adjacent residences from any potential glare. Therefore, the Project would not create a new source of substantial glare that would adversely affect daytime or nighttime views in the area, and no impact would occur.

NO IMPACT

2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the Project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on 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-agricuitural use or conversion of forest land to non-forest use?	☐	☐	■	☐

a. *Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

The 15.2 acre Project Site is classified by the California Department of Conservation (DOC) as Prime Farmland (DOC 2022). Prime Farmland is defined as land with the best combination of physical and chemical characteristics for the production of crops and must have the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed according to current farming methods (DOC 2026a). However, the Project Site is currently a fallow field and has not been actively used for agriculture since July 2023 when the walnut orchard was removed and no future agricultural use of the site anticipated..

The Project involves the construction, operation, and decommissioning of a solar energy generation facility on approximately 15.2 acres of the 20.4-acre parcel. The chemical and physical soil properties of the soil would remain substantially the same under Project conditions. Soil must meet the physical and chemical criteria for Prime Farmland or Farmland of Statewide Importance as determined by the United States Department of Agriculture Natural Resources Conservation Service (NRCS). Factors considered in qualification of a soil by the United States National Resources Conservation Service include, but are not limited to, acid-alkali balance, soil sodium content, erodibility, rock fragment content, and water moisture regimes (DOC 2026b). For the reasons explained below, Project construction, operation and maintenance would have a less-than-significant impact on the physical and chemical composition of onsite soils, which underly the Project at the end of the Project's anticipated 35 year lifespan. No application of fertilizers or other soil amendments, which would alter the chemical composition of the existing soil by adding supplemental nutrients, is proposed. Water-based dust suppression or appropriate soil stabilizers would be used for dust suppression, limiting onsite erosion and maintaining present erodibility. Upon decommissioning, Project infrastructure would be removed and the Project Site returned to a condition

suitable for agricultural use pursuant to the requirements of a County-approved Decommissioning Plan. The access road and other areas that were compacted during construction, operations, and decommissioning would be tilled to restore the sub-grade material to match the depth and density of surrounding properties pursuant to the required decommissioning plan. Therefore, the Project would not permanently impact the agricultural value of the Project Site. Additionally, as stated above, the Project Site is not actively used for agriculture. The Project would not remove any active agricultural uses and would not preclude future agricultural uses at the Site. Overall, the Project would not affect the Project Site's long-term suitability for agricultural use or permanently convert Prime Farmland to a non-agricultural use. Impacts related to conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

b. Would the Project conflict with existing zoning for agricultural use or a Williamson Act contract?

The Project parcel is zoned AG-40 (General Agriculture, 40-acre minimum) and has a General Plan land use designation of General Agriculture (A/G) (San Joaquin County 2025). Solar energy facilities within the AG-40 zoning district are conditionally permitted uses in San Joaquin County according to San Joaquin County Ordinance Code, Chapter 9-203.020, and require approval of a Conditional Use Permit (CUP) in compliance with Chapter 9-804. As such, the Project would not conflict with existing agricultural zoning, with compliance with applicable County development standards and CUP conditions of approval. While the Project Site is designated as Prime Farmland, it does not currently support active agricultural use. As discussed throughout this section, implementation of the Project would not adversely affect or preclude future agricultural production on the Project Site following the Project's anticipated 35 year lifetime in accordance with San Joaquin County Code Section 9-409.430(b)(5), Farmland Protection.

San Joaquin County participates in the Williamson Act program; however, the Project parcel (Assessor's Parcel Number [APN] 091-170-060) is not subject to a Williamson Act contract (DOC 2023). Therefore, the Project would not conflict with existing zoning for agricultural use or a Williamson Act contract and impacts related to existing zoning for agricultural use and existing Williamson Act contracts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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

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

The Project Site does not contain any forest land or timberland, and the Project Site is not zoned as forest land, timberland, or timberland zoned Timberland Production. Additionally, the surrounding properties are not zoned as forest land, timberland, or timberland zoned Timberland Production; and the surrounding properties do not contain any forest land or timberland. Therefore, there would be no impact to forest land.

NO IMPACT

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

The Project Site is surrounded on all sides by active agriculture, orchards, and associated residences, and the parcels adjacent to the Site are classified as Prime Farmland. The Project would temporarily convert approximately 15.2 acres of land classified as Prime Farmland to solar energy use. The solar energy use is temporary (35-year Project life), reversible upon decommissioning, and limited in scope, as described under impact a. Therefore, agricultural operations could resume on the Project Site after Project

decommissioning and the Project would not impact the Site's ability to be used for agricultural operations. No induced or indirect conversion of additional farmland beyond the Project boundary would occur. The Project Site does not contain agricultural support infrastructure such as agricultural processing facilities and would not cause the closure of these offsite. Additionally, no new uses proposed within the Project Site would inhibit or preclude present or future agricultural use in the surrounding area. For example, implementation of the Project would not divide or physically interfere with an existing agricultural operation, would not degrade existing soil quality, and would yield relatively low water consumption compared to surrounding agricultural uses. As no forest land exists on or adjacent to the Project Site, there will be no conversion of forest land to non-forest use. Overall, impacts related to conversion of Farmland to non-agricultural use would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
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?	☐	☐	■	☐

Criteria air pollutant emissions generated by Project construction and operation were estimated using the California Emissions Estimator Model (CalEEMod), version 2022.1. CalEEMod uses Project-specific information, including the Project's land use and location to model a project's construction and operational emissions. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices C, D, and G (California Air Pollution Control Officers Associated [CAPCOA] 2022). The analysis reflects the construction and operation of the Project as described under *Description of Project*.

Project construction would primarily generate temporary criteria pollutant from construction equipment operation on-site, construction worker vehicle trips to and from the site, and export of demolished materials off-site. Construction of the proposed Project was assumed occur over six months, beginning in October 2026 and ending in May 2027. Applicant-provided information was used to populate the construction schedule and their respective equipment lists. Where specific information was not available, CalEEMod default information was utilized. Construction emissions account for emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and vendor trips. CalEEMod estimates construction emissions by multiplying the amount of time equipment is in operation by emission factors.

Operational emissions modeled include mobile source emissions from trips from 20 annual operations and maintenance visits and two annual panel washings. Because operation of the solar arrays would generate electricity, there would not be any criteria pollutant emissions attributed to energy use. The following analysis is based upon the Air Quality and Greenhouse Gas Study prepared for the Project by Rincon Consultants (Rincon) in May 2026 (Appendix A).

a. Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The Project Site is in the San Joaquin Valley Air Basin (SJVAB) and is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD is in non-attainment for ozone, particulate matter with diameters less than 10 microns (PM_{10}), and particulate matter with diameters less than 2.5 microns ($PM_{2.5}$). The SJVAPCD has prepared several air quality attainment plans to achieve ozone and particulate matter standards, the most recent of which include the *2020 Reasonably Available Control Technology Demonstration for the 2015 8-Hour Ozone Standard* and the *2013 Plan for the Revoked 1-Hour Ozone Standard, 2007 PM_{10} Maintenance Plan and Request for Re-designation, 2012 $PM_{2.5}$ Plan,* and

2015 Plan for the 1997 $PM_{2.5}$ Standard. The SJVAB is in attainment for carbon monoxide (CO), sulfur dioxide, and lead, and there are no attainment plans for those pollutants.

Construction, operation, and decommissioning of the Project would result in emissions of criteria pollutants including ozone precursors (such as reactive organic compounds [ROG] and nitrogen oxides [NO_X]) and particulate matter. Per Section 7.12 of the GAMAQI, the SJVAPCD has determined that projects with emissions above the thresholds of significance for criteria pollutants would conflict with/obstruct implementation of the SJVAPCD's air quality plans (SJVAPCD 2015). As discussed under criterion 3(b), below, Project construction, operation, and decommissioning would not exceed regulatory thresholds and therefore would not have significant impacts with respect to criteria pollutant emissions. Therefore, the Project emissions would not conflict with, or obstruct implementation of, existing air quality plans at a local level. As such, impacts related to the applicable air quality plan would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

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

Air pollution is largely a cumulative impact. The nonattainment status of the SJVAPCD for regional pollutants is a result of past and present development, and SJVAPCD develops and implements plans for the future attainment of ambient air quality standards. Using the emissions levels required based on the air quality management plans, the SJVAPCD has developed emissions thresholds under which individual Projects would not be anticipated to hinder the SJVAPCD's attainment of the ambient air quality standards. Based on these considerations, Project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

The SJVAB is a nonattainment area for ozone, PM_{10}, and $PM_{2.5}$ under the National Ambient Air Quality Standards (NAAQS) and/or California Ambient Air Quality Standards (CAAQS). The current air quality in the SJVAB is the result of cumulative emissions from motor vehicles, off-road equipment, commercial and industrial facilities, and other emission sources. Projects that emit these pollutants or their precursors (i.e., ROG and NO_X for ozone) potentially contribute to poor air quality.

The SJVAPCD provides quantitative thresholds to determine the significance of temporary construction-related pollutant emissions and long-term operational-related pollutant emissions. These thresholds are shown in Table 1.

Table 1 SJVAPCD Air Quality Significance Thresholds

Pollutant	Construction Thresholds (Tons per Year)	Operation Thresholds (Tons Per Year)
NO_X	10	10
ROG[1]	10	10
PM_{10}	15	15
$PM_{2.5}$	15	15
SO_X	27	27
CO	100	100

NO_X= nitrous oxides; ROG = reactive organic gases; PM_{10} = particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less; SOx = sulfur oxide; CO = carbon monoxide

[1] ROG are formed during combustion and evaporation of organic solvents. ROG are also referred to as VOC.

Source: San Joaquin Valley Air Pollution Control District 2015a

In addition to the criteria pollutant thresholds outlined above, the SJVAPCD has published the *Ambient Air Quality Analysis Project Daily Emissions Assessment* guidance, which is summarized in Section 8.4.2,

Ambient Air Quality Screening Tools, of the *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI). The GAMAQI provides a screening threshold of 100 pounds per day of any of the following pollutants: NO_X, ROG, PM_{10}, $PM_{2.5}$, sulfur oxide, and CO. The screening threshold was used to evaluate localized construction activities and operational activities separately. The District recommends that an ambient air quality analysis be performed when the increase in on-site emissions from construction activities exceeds the 100 pounds per day screening level of any criteria pollutant. Pursuant to SJVAPCD's GAMAQI and Rule 9510 – Indirect Source Review, when assessing the significance of Project-related impacts on local air quality, the impacts may be significant if on-site emissions from construction or operational activities exceed the 100 pounds per day screening level after implementation of all enforceable mitigation measures. The Project would be subject to Rule 9510, because it would develop more than 9,000 square feet, which is the ambient air quality analysis screening level threshold for unconventional land use developments not identified as residential, commercial, or industrial (e.g., a solar facility).

Construction and Decommissioning Emissions

Annual Criteria Air Pollutant Emissions

Project construction would generate air pollutant emissions from entrained dust, off-road equipment uses, vehicle emissions, and architectural coatings. Off-site emissions would be generated by construction workers' daily commute trips and heavy-duty diesel haul and vendor truck trips. Project construction would occur over approximately 6 months. Construction emissions would vary substantially from day-to-day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions.

At the time of preparation of this environmental document, the nature of the equipment available at the time of decommissioning is unknown, as is the extent of activities that would be required during decommissioning. Therefore, for this analysis, it was assumed that decommissioning activities would be similar to those of construction activities and therefore emissions from decommissioning would be equal to that of construction emissions. It is likely that decommissioning activities would be less intensive than construction, especially given the fact that it is approximately 35 years into the future, and the efficiency of vehicles and equipment would be better and emit fewer pollutants.

Table 2 shows the estimated annual construction and decommissioning emissions by construction phase. Most particulate matter emissions are fugitive emissions. As shown, the annual construction and decommissioning emissions would not exceed the SJVAPCD's annual significance thresholds for any criteria pollutant. As such, impacts related to criteria pollutants would be less-than-significant.

Table 2 Annual Construction and Decommissioning Emissions

	Emissions (Tons per Year by Phase)					
Phase	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Construction	<1	1	1	<1	<1	<1
Decommissioning	<1	1	1	<1	<1	<1
Significance Threshold	10	10	100	27	15	15
Exceed Significance Threshold?	No	No	No	No	No	No

CO = carbon monoxide; NO_X= nitrous oxides; ROG = reactive organic gases; PM_{10} = particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less; SOx = sulfur oxide

Notes: Rounded values shown; columns may not total exactly. See Appendix A for calculations. Bold numbers indicate an exceedance of applicable thresholds.

Furthermore, the Project would comply with SJVAPCD Rule 9510, Indirect Source Review, which requires large development projects to reduce exhaust emissions from construction equipment by 20 percent for NO_X and 45 percent for PM_{10} compared to the statewide average or demonstrate use of a clean fleet

(such as United States Environmental Protection Agency [USEPA] Tier 4 equipment).[4] Compliance with SJVAPCD Rule 9510 could result in additional emissions reductions that were conservatively not included in Project estimates. In addition, the Project Sponsor would create a dust control plan and implement dust control measures pursuant to SJVAPCD Rule 8021 which would further reduce dust emissions.

Daily Criteria Air Pollutant Emissions

Construction and decommissioning activities would not exceed the SJVAPCD's recommended 100 pounds per day screening threshold during construction, as shown in Table 3. Because daily emissions from Project construction and decommissioning would not exceed screening thresholds, the Project would not contribute cumulatively to a net increase in criteria pollutants.

Table 3 Maximum Daily Construction and Decommissioning Emissions

	Emissions (pounds/day) by Phase					
	ROG	NO_X	CO	SO_X	PM_{10}[1]	$PM_{2.5}$[1]
Maximum Daily Emissions (Construction)	1.1	10.4	16.2	<1	1.1	0.5
Maximum Daily Emissions (Decommissioning)	1.1	10.4	16.2	<1	1.1	0.5
Screening Threshold	100	100	100	100	100	100
Exceed Screening Threshold?	No	No	No	No	No	No

ROG = reactive organic gases; NO_X = nitrous oxides; CO = carbon monoxide; SO_x = sulfur oxide; PM_{10} = particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less

[1] Includes compliance with Rule 8021 dust control measures, which accounts for watering.

Bold values indicate where thresholds are exceeded.

Source: Appendix A

Operational Impacts

Annual and Daily Criteria Air Pollutants

The Project would generate criteria pollutants during operations resulting from area sources (e.g., consumer products used during maintenance activities), and mobile sources (e.g., vehicle emissions). California Emissions Estimator Model (CalEEMod) default values for operations were used for the most conservative estimates for emissions, and would generally overestimate the amount of vehicle trips, water usage, energy usage, etc. for Project operations. As shown in Table 4, operational emissions from the Project would not exceed SJVAPCD annual significance thresholds for any criteria pollutant. In addition, Table 5 demonstrates that daily operational emissions would not exceed SJVAPCD daily screening thresholds for any criteria pollutant. As such, impacts related to criteria air pollutants would be less-than-significant.

[4] While the Project is anticipated to use construction equipment outfitted with engines that meet the USEPA Tier 4 standard, modeling assumed default engine tiers for the most conservative estimates.

Table 4 Estimated Annual Operational Emissions

	Emissions (tons/year)					
Source	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area[1]	<1	<1	<1	<1	<1	<1
Energy	0	0	0	0	0	0
Mobile	<1	<1	<1	<1	<1	<1
Total	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
Significance Threshold	10	10	27	100	15	15
Exceed Significance Threshold?	No	No	No	No	No	No

NO_X= nitrous oxides; ROG = reactive organic gases; PM_{10} = particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less; lbs/day = pounds per day; SOx = sulfur oxides

[1]Area source emissions are associated with emissions of consumer products used for cleaning and landscaping emissions, and are conservatively included for this analysis.

Totals may not add up due to rounding vehicles. See Appendix A for calculations.

Table 5 Estimated Daily Operational Emissions

	Emissions (lbs/day)					
Source	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Combined Total Daily Operations	<1	<1	<1	<1	<1	<1
SJVAPCD Operational Screening Threshold	100	100	100	100	100	100
Exceed Screening Threshold?	No	No	No	No	No	No

ROG = reactive organic gases; NO_X = nitrous oxides; CO = carbon monoxide; SO_X = sulfur oxide; PM_{10} = particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less

Totals may not add up due to rounding vehicles. See Appendix A for calculations.

Furthermore, renewable energy projects, such as the Project, assist utilities like PG&E and the State of California in achieving criteria air pollutant emission reductions by providing the means of generating electricity as a source of renewable energy. By expanding access to renewable energy systems, the Project would support reducing the need for additional electricity to be generated by fossil fuel power plants. The energy conservation achieved by the Project would reduce fossil fuel consumption, thereby reducing criteria air pollutant emissions from the electricity sector. As such, impacts related to criteria pollutants would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

c. Would the Project expose sensitive receptors to substantial pollutant concentrations?

The nearest sensitive offsite receptor is a residential property adjacent to the northwestern fenceline. This residence is approximately 54 feet from the Project Site and 75 feet from the nearest solar array Other nearby residences are approximately 500 feet west and southwest of the Project Site border. Air quality varies based on the amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Air quality problems leading to health impacts arise when the rate of pollutant emissions exceeds the rate of dispersion. Some land uses are more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution, as identified by the California Air Resources Board (CARB), include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. Potential harmful airborne pollutants that could be generated by the Project are toxic air contaminants (TAC), CO, and spore-containing fugitive dust that can cause Valley Fever. Therefore, each of these is addressed under this criterion with respect to the Project.

Toxic Air Contaminants

TACs are airborne substances that are a diverse group of air pollutants that may cause or contribute to an increase in deaths or serious illness, or that may pose a present or potential hazard to human health. TAC impacts are described by carcinogenic risk and by chronic (i.e., long duration) and acute (i.e., severe but of short duration) adverse effects on human health.

Construction and Decommissioning

The greatest potential for TAC emissions during construction and decommissioning would be diesel particulate matter (DPM) emissions associated with heavy-duty equipment during the 6-month construction period and decommissioning activities. CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (April 2005) recommends against siting sensitive receptors within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day, and within 1,000 feet of industrial land uses such as warehouses and distribution centers with more than 100 truck trips per day. These distances are used as general guidance for the recommended distance between sensitive receptors and sources of TAC emissions. While these siting distances are not particular to construction activities, the primary source of TAC emissions from construction/decommissioning equipment is DPM. As seen in Table 4 and Table 5, the total PM10 emissions[5] from construction would be well below the SJVAPCD annual and maximum daily significance thresholds. As DPM is a component of PM_{10} exhaust that contributes to the total PM_{10} emissions, DPM emissions would be anticipated to be low as well. Furthermore, construction and decommissioning of the Project would occur across the entire Project Site and therefore, emissions from construction activities would be diluted across the Project Site. Furthermore, concentrations of air pollutants from construction and decommissioning emission sources to off-site sensitive receptors would drop off rapidly as air dispersion occurs, minimizing potential exposure and potential health risks. Additionally, wind in the area blows generally from west to east, blowing the majority of emissions away from the nearest off-site receptor which is located to the north of the Project Site and away from the nearest on-site receptor located toward the south of the Project Site. While there are residences to the east of the Project Site, these residences are at a much greater distance away from the Project Site at 1,200 feet to the east and would experience minimal exposure to potential health risks. The Project would adhere to the applicable SJVAPCD requirements and control strategies intended to reduce emissions from construction equipment and activities, including all rules under Regulation VIII, *Fugitive PM_{10} Prohibitions*, and Rule 9510, *Indirect Source Review*. Additionally, the Project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than five minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. Therefore, due to the short-term nature of construction and decommissioning activities, the time between construction and decommissioning activities, and typical wind patterns, air quality impacts related to construction and decommissioning generated TAC emissions would be less than significant.

Operation

The solar Project is not a land use typically associated with high health risk, and there are no stationary sources of TAC. The Project would result in trips from 20 annual operations and maintenance visits, including two panel washings, which would generate minor amounts of DPM to be emitted from maintenance vehicles that will occasionally access the site. Therefore, the level of emissions and duration of exposure would be minimal and the Project would not emit substantial amounts of TACs during normal operations as seen in Table 5. Furthermore, TACs would not be generated by operation of the solar panels at the Project Site. such, Project operations would not expose sensitive receptors to substantial TAC concentrations and impacts would be less-than-significant.

Total PM_{10} emissions reported in Table 4 and Table 5 are comprised of PM_{10} from fugitive dust and PM_{10} from engine exhaust, which are particulate emissions from combustion engines and would include DPM.

Carbon Monoxide Hotspots

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard and is associated with long-term operational emissions. Localized CO hotspots can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the federal one-hour standard of 35 parts per million or the federal and State eight-hour standard of 9 parts per million (SJVAPCD 2024a). The entire SJVAB is in conformance with State and federal CO standards and no air quality monitoring stations report CO levels in the SJVAPCD jurisdiction. Additionally, CARB no longer reports CO concentrations anywhere in California. Based on the low background level of CO in the SJVAB (indicated by the lack of monitoring at State or local levels), the low and the ever-improving emissions standards for new sources in accordance with State and federal regulations, and the fact that the Project would result in 20 annual operations and maintenance visits , including two panel washings per year, each involving two light to medium duty trucks, four employees, and a water buffalo. The Project would not result in a CO hotspot. Additionally, as demonstrated under criterion 3(b), above, CO emissions during construction, operation, and decommissioning for the overall Project, including mobile sources, would not exceed ambient air quality standards. Therefore, the Project would not expose sensitive receptors to substantial CO concentrations, and localized air quality impacts related to CO hot spots would be less-than-significant.

Valley Fever

Construction activities that include ground disturbance can result in fugitive dust, which can cause fungus *Coccidioides* spores to become airborne if they are present in the soil. These spores can cause Valley Fever, which is a lung infection caused by the fungus *Coccidioides* that is found in the soil in some parts of the United States. Workers who disturb soil where fungal spores are found, whether by digging, operating earthmoving equipment, driving vehicles, or by working in dusty, wind-blown areas, are more likely to breathe in spores and become infected. It is not a contagious disease, and secondary infections are rare. The Project is located in San Joaquin County, which reported 119 preliminary cases between January 1, 2026 and May 31, 2026 (California Department of Public Health 2026).

Construction and decommissioning activities associated with the Project would include ground-disturbing activities that could result in an increased potential for exposure of nearby residents and on-site workers to airborne spores, if they are present. Compliance with dust control measures required by SJVAPCD Rule 8021 would minimize personnel and public exposure to Valley Fever and reduce the potential risk of nearby resident and on-site worker exposure to Valley Fever. In addition, the Project would adhere to the California Code of Regulations (CCR), Title 8, Sections 342, 3203, 5141, 5144, and 14300, related to Valley Fever protection and exposure, which would reduce potential risks by requiring incident reporting; requiring implementation of an Injury and Illness Prevention Program; and providing respiratory protection guidance. However, impacts related to Valley Fever resulting from the Project may still be potentially significant. Therefore, mitigation is necessary to provide for protection beyond the regulatory requirements in order to reduce this potentially significant impact to a less- than-significant level. As such, implementation of Mitigation Measure AQ-1 would be required to reduce impacts to a less-than-significant level.

Preliminary cases include confirmed, probable, and suspected cases that are not yet finalized or confirmed by California local health jurisdictions.

Mitigation Measures

AQ-1 Minimize Personnel and Public Exposure to Valley Fever

Prior to site preparation, grading activities, or ground disturbance, the Project Sponsor shall prepare a Fugitive Dust Control Plan for the Project. The Fugitive Dust Control Plan shall include the following at a minimum:

- Equipment, vehicles, and other items shall be cleaned thoroughly of dust before they are moved off-site to other work locations.
- Wherever possible, grading, and trenching work shall be phased, so that earth-moving equipment works well ahead or down-wind of workers on the ground.
- The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.
- If a water truck runs out of water before dust is dampened sufficiently, ground workers exposed to dust are to leave the area until a full truck resumes water spraying.
- All heavy-duty earth-moving vehicles shall be closed-cab and equipped with a High Efficiency Particulate Arrestance-filtered air system, or High Efficiency masks that can be worn by the vehicle operators.
- N95 respirators shall be available to on-site workers for the duration of the construction period.
- Workers shall receive training to recognize the symptoms of Valley Fever and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be kept on-site for review as required by regulatory agencies.
- Valley Fever information shall be available on-site for all construction personnel. The information shall provide, at a minimum, a description of the symptoms, health effects, preventative measures, and treatment.

Significance After Mitigation

Mitigation Measure AQ-1 would ensure that construction worker exposure to Valley Fever is less-than-significant by requiring the preparation and implementation of a Fugitive Dust Control Plan for the Project which includes dust suppression measures, respiratory protection for workers, and Valley Fever awareness and training to minimize worker exposure to airborne dust. Overall, impacts would be less than significant after mitigation.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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

The Project would generate oil and diesel fuel odors during construction from equipment use and odors related to asphalt paving. The odors would be limited to the construction and/or decommissioning period and would be intermittent and temporary. Furthermore, these odors would dissipate rapidly with distance from in-use construction equipment. With respect to operation, CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) provides recommendations regarding the siting of new sensitive land uses near potential sources of odors (e.g., sewage treatment plants, landfills, recycling facilities, biomass operations, autobody shops, fiberglass manufacturing, and livestock operations). Project Site solar energy operations are not identified on this list and would not have odor sources during normal operations. Therefore, the Project would not generate objectionable odors affecting a substantial number of people, and impacts related to other emissions not elsewhere assessed would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

4 Biological Resources

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

The following analysis is based upon the Biological Resources Assessment (BRA) prepared for the Project by Rincon Consultants dated April 2026 (Appendix B).

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

Special-Status Plant Species

As discussed in Appendix B, results of the USFWS Information for Planning and Consultation (IPaC), the CDFW California Natural Diversity Database (CNDDB), and California Native Plant Society (CNPS) searches identified 14 special-status plant species known to occur within the 2-mile/nine-quad search radius of the Project Site (CNPS 2026, CNDDB 2026, USFWS 2026a). None of these are expected to occur on the Project Site due to a lack of suitable habitat or because the Project Site is outside of the species known elevation range. In addition, the disturbed nature of the Project Site is likely to prohibit the

establishment of special-status plants from occurring due to agricultural management practices. Therefore, the Project would result in no impact to special-status species.

Special-Status Wildlife Species

Results of the CNDDB and IPaC searches indicated 19 special-status wildlife species are known to occur within the 2-mile/nine-quad search radius of the Project Site (CNDDB 2026, USFWS 2026a). Of these, two species have a moderate potential to occur in the Project Site and are discussed further below. The remaining 17 are not expected to occur or have a low potential to occur due to a lack of suitable habitat or because the Project Site is outside of the species' known range. Therefore, these 17 species were removed from further consideration.

Swainson's hawk (*Buteo swainsoni*; state threatened) breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or rows of trees. Swainson's hawk requires suitable foraging areas within 10–12 miles of a nest site, such as grasslands, alfalfa, or grain fields that support small mammal populations. Swainson's hawks are known to nest in single trees on agricultural landscapes and occasionally in orchards. Suitable foraging habitat in the vicinity of the Project Site is present in the scattered surrounding agricultural fields. Trees that may support nesting are present in adjacent rural residential areas; however, no trees are present on the Project Site. In addition, there are 6 documented occurrences of Swainson's hawk within 5 miles of the Project Site (CNDDB 2026). This species is covered under the SJMSCP.

As the Swainson's hawk is a Covered Species under the SJMSCP, the Project Sponsor would be required to comply with all provisions of the SJMSCP, which includes incidental take minimization measures to protect Swainson's Hawk, such as protecting nest trees and foraging habitat. Specifically, "If the Project Proponent elects to retain a nest tree, and in order to encourage tree retention, the following Incidental Take Minimization Measure shall be implemented during construction activities:

> If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest.
>
> If the Project Proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied."

With implementation of these measures as included in the SJMSCP, potential impacts to Swainson's hawk would be mitigated to less than significant by ensuring construction and operation activities are conducted a safe distance from the active nests and foraging habitat is preserved.

Crotch's bumble bee (*Bombus crotchii*; state candidate for listing) habitat requirements include availability of suitable colony nesting sites, floral resources to obtain nectar and pollen throughout the duration of the colony period (spring, summer and fall), and suitable overwintering sites for queens. Most bumble bees are primitively eusocial insects that live in colonies composed of a queen, workers, and, near the end of the season, reproductive members of the colony (new queens, or gynes, and males). Nest sites typically include underground cavities, wood or rock piles, brush piles, and other cavities on open west-southwest slopes bordered by trees. Little is known about hibernacula or overwintering sites. Suitable floral resources and potential nesting sites were present in the Project Site during the field survey. While there are no documented CNDDB occurrences within the nine-quad search, the Project Site is within the current range for this species. The nearest documented occurrence in Bumble Bee Watch is approximately 23 miles northeast of the Project Site (Xerces Society 2026).

Crotch's bumble bee is not covered under the SJMSCP. As such, this species would need to be evaluated separately from the SJMSCP, as species that are candidates for listing under the CESA are afforded the same protections as if they were formally listed. Implementation of Mitigation Measure BIO-1 (described below) would reduce potential impacts to Crotch's bumble bees that may occur in the Project Site during the Colony Active Period to less than significant by requiring a habitat assessment of the Project Site if construction begins during the Colony Active Period and implementing avoidance measures if suitable habitat or bees are found on Site.

Nesting Bird Species. Native nesting birds protected by the Migratory Bird Treaty Act or the California Department of Fish and Game code may use the Project Site and surrounding habitat during the breeding season (typically February 1 through August 31). These species could be impacted by vegetation removal (herbaceous species in the Project Site), as well as grading and other construction activities on the Project Site. To comply with the CEQA, a preconstruction nesting bird survey would be required if construction activities were to occur during the breeding season. Implementation of Mitigation Measure BIO-2 (described below) would reduce potential impacts to nesting birds that may occur in the Project Site to less than significant.

Mitigation Measures

BIO-1 Crotch's Bumble Bee Avoidance

Should construction begin during the Colony Active Period (April – August), a formal habitat assessment shall be performed by a qualified biologist prior to initiating ground disturbing activities to determine if suitable nesting or foraging habitat is present in the Project Site. The assessment shall include:

1. Review of occurrence record data
2. Analysis of foraging, nesting, and overwintering resources
3. Documentation of plant species observed (including what is blooming at the time of the survey and percent cover)

The locations of any nesting resources, including rodent burrows, cavities, thatched grasses, brush, rock piles, logs, and manmade structures like dumped furniture, shall be mapped during the assessment. Areas adjacent to the Project shall also be considered, as accessible, to determine if there is suitable nesting or foraging habitat for Crotch's bumble bee.

If suitable nesting and foraging resources are detected in the Project Site during the habitat assessment, protocol-surveys following the CDFW *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species* (CDFW 2023) shall be conducted by a qualified biologist (i.e. someone with a valid CDFW Scientific Collecting Permit for Crotch's bumble bee) to determine if Crotch's bumble bee is present in the Project Site. A minimum of three visits shall be conducted during the Colony Active Period (April – August) and will be spaced 2-4 weeks apart. If no Crotch's bumble bees are detected on the Site, no further mitigation would be required. If Crotch's bumble bees are detected, consultation with CDFW shall be initiated to determine the most appropriate strategy to avoid impacts to bumble bees on the Site.

If suitable foraging habitat is absent from the Project Site, but suitable nesting habitat is present and foraging habitat occurs adjacent to the Site, preconstruction nest surveys for Crotch's bumble bee shall be conducted according to the *CDFW Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species* (CDFW 2023) document 48 hours prior to construction to determine if any active Crotch's bumble bee nests are present. If no active Crotch's bumble bee nests are detected during the preconstruction nest survey, no further mitigation would be required. If Crotch's bumble bee nests are detected, they shall be avoided by a 50-foot buffer, as possible. If avoidance is not possible, consultation with CDFW shall be initiated to determine the most appropriate strategy to avoid impacts to bumble bees on the site.

BIO-2 Preconstruction Nesting Bird Surveys

A preconstruction nesting bird survey shall be performed by a qualified biologist no earlier than one week prior to any ground disturbance or vegetation removal activities that start during the nesting season (March 1–August 31) to determine if any native birds are nesting on or near the Project Site (including a 250-foot buffer for raptors, where accessible). If any active nests are detected during surveys, a suitable avoidance buffer from the nests shall be determined by a 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/or the nests are no longer active, as determined by the qualified biologist.

Any ground disturbance or suitable nesting habitat (i.e., trees and vegetation) that would need to be removed under the Project shall occur outside of the bird breeding season (September 1–February 28) to avoid impacts to nesting birds, when feasible.

Significance After Mitigation

Mitigation Measure BIO-1 would reduce potential impacts to Crotch's bumble bee to less-than-significant by requiring a formal habitat assessment and focused surveys for this species be completed should construction start during the Colony Active Period to determine if suitable habitat and Crotch's bumble bees are present on the Project Site. If suitable habitat is present and subsequent surveys identify Crotch's bumble on the Project Site that cannot be avoided, consultation with CDFW would be required to determine if issuance of an ITP would be necessary to avoid and/or minimize impacts to Crotch's bumble bee. Therefore, impacts would be less than significant after mitigation.

Mitigation Measure BIO-2 would reduce potential impacts to nesting birds to less-than-significant by requiring the completion of nesting bird surveys prior to the start of any ground disturbance conducted within the nesting season, enacting nest avoidance buffers for any active nests, and by removing suitable nesting material outside of the nesting season. Therefore, impacts would be less than significant after mitigation.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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

The Project Site is disturbed and dominated by non-native grasses and forbs. No sensitive habitats or sensitive vegetation communities were detected during the field survey, nor have any been mapped by CDFW or USFWS in the Project area (Appendix B).

Critical Habitat is a term defined and used in the ESA 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 Site does not fall within Critical Habitat limits for any special-status wildlife or plant species. The nearest mapped Critical Habitat is approximately 3.70 miles east of the Project Site for vernal pool fairy shrimp (*Branchinecta lynchi*).

No wetlands or other waters have been mapped in or adjacent to the Project Site by the National Wetlands Inventory (USFWS 2026c), and no wetlands, waters, or other potentially jurisdictional aquatic features were observed on the Project Site during the field survey.

Therefore, there would be no impacts to riparian habitat or sensitive natural communities.

NO IMPACT

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

No wetlands or other waters have been mapped in or adjacent to the Project Site by the National Wetlands Inventory (USFWS 2026c), and no wetlands, waters, or other potentially jurisdictional aquatic features were observed in the Project Site during the field survey.

Thus, the Project would not impact waters or wetlands.

NO IMPACT

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

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 Site 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 (CDFW 2026b). Due to the disturbed nature of the Project Site and level of development and human disturbance surrounding the Site, common wildlife species like raccoon (*Procyon lotor*) may pass through the Site to access adjacent patches of cover and foraging habitat, but migratory wildlife use of the Site is unlikely. Therefore, no impacts to wildlife movement would occur.

NO IMPACT

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

The Project would not conflict with San Joaquin County policies or ordinances protecting biological resources. There are no existing trees within the Project Site. Additionally, the Project would be developed in compliance with the San Joaquin County General Plan (San Joaquin County 2016), including Natural and Cultural Resources (NCR) Elements NCR-2, NCR-5, and NCR-6. County ordinances and guidelines protecting significant oak woodlands and heritage trees would not apply because neither are present on the Project Site. Therefore, the Project would result in no impact related to local policies or ordinances.

NO IMPACT

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

The Project Site is located within the SJMSCP area. The SJMSCP is a comprehensive conservation planning strategy that addresses the needs of multiple plant and animal species while protecting the region's agricultural interests as the population increases over the next 50 years (2001–2051).

The SJMSCP provides coverage for impacts to biological resources pursuant to CEQA, the California Endangered Species Act, and ESA, and is approved and authorized by the CDFW and USFWS. As such, the Project would be subject to review under the SJMSCP. As part of this process, the Project would be required to comply with all provisions of the SJMSCP, including implementation of applicable Incidental Take Minimization Measures and payment of mitigation fees. These fees must be paid prior to the initiation of construction activities to ensure compliance with the plan and to mitigate potential impacts to covered species and habitats. Additionally, the implementation of all applicable Incidental Take Minimization Measures would be conditions of approval for the Project's CUP entitlement. With compliance with these regulatory measures, implementation of the Project would not conflict with provisions of the SJMSCP, and, therefore, no impacts related to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan would occur.

NO IMPACT

5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the Project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	■
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	■	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	■	☐

The analysis in this section is informed by the Cultural Resources Technical Report prepared by Rincon Consultants in October 2025 (Appendix C).

a. *Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*

As detailed in the Cultural Resources Technical Report (Appendix C), the Cultural Resources Study Area (Study Area) for the Project includes the entirety of APN 091-170-060. As described in Appendix C, the field survey and background research identified one built structure in the Study Area, 18133 East Comstock Road, consisting of a single-family residence, detached garage, and a storage barn. However, the structures were determined to be ineligible for listing in the National Register of Historic Places and the California Register of Historical Resources (CRHR) under any designation criteria due to a lack of historical or architectural significance. 18133 East Comstock Road is not considered a historical resource under CEQA. Furthermore, the single-family residence, detached garage and storage barn would remain in place and would not be altered, demolished, relocated, or otherwise affected by Project construction, operation, or decommissioning activities; therefore, even if 18133 East Comstock Road was determined to qualify as a historical resource under CEQA, no impact would occur.

The Project would not result in a substantial adverse change in the significance of any known or potential historical resource pursuant to §15064.5. No impact would occur.

NO IMPACT

b. *Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

The Cultural Resources Technical Report records search of the California Historical Resources Information System (CHRIS), Sacred Lands File search, and the archaeological field survey identified no known archaeological resources within the Study Area. While the CHRIS records search returned negative results, no previous cultural resource studies have been conducted within the Study Area or a 0.5-mile radius surrounding it. As such, the lack of prior investigations limits the significance of a negative records search. Furthermore, the lack of surface evidence during the archaeological field survey does not preclude the subsurface existence of archaeological deposits. The geologic unit mapped within the Project Site consists of alluvial fan deposits that were deposited during the Holocene, a period that dates to human occupation of the region, and contains buried A horizon topsoil to a depth of approximately 4.33 to 6 feet below the ground surface. Holocene-age alluvium is the most likely landform to contain pre-contact subsurface archaeological resources, and the presence of buried A horizon topsoil is generally indicative of the natural burial and preservation of archaeological deposits. The Study Area's proximity to

the Calaveras River, a corridor known to have supported pre-contact Yokut settlement and a source of freshwater and a variety of plant and animal resources for prehistoric peoples, further increases the likelihood for encountering buried archaeological deposits. The proximity to the Calaveras River, presence of Holocene-aged alluvial geologic formations, and buried A Horizon topsoil indicates that the Study Area has high sensitivity for the presence of subsurface pre-contact archaeological deposits between 4 and 6 feet in depth.

In addition, the Study Area has been in use as an orchard with an associated residential building since at least the late 1940s. While the majority of the property was utilized as a walnut orchard, the Study Area has remained largely unchanged since this time, with only recent plowing and removal of the orchard. This type of activity constitutes minimal ground disturbance. Potential subsurface archaeological deposits typical of agricultural properties include wells, privies, cisterns, burn areas, refuse disposal areas, and burials. Based on the longstanding use of the area since the 1940s, the Study Area has a moderate sensitivity for post-contact archaeological deposits associated with the agricultural residence and Project-related ground disturbing activities, particularly deeper excavations associated with utility pole installation (6 to 8 feet below ground surface) and trenching (3 to 5 feet below ground surface), have the potential to encounter previously unidentified post-contact materials in undisturbed native soils.

Project-related ground disturbing activities associated with trenching (3 to 5 feet below ground surface), utility pole installation (6 to 8 feet below ground surface), utility pad installation (2 to 3 feet below ground surface) and fence post installation (3 to 4 feet below ground surface) may extend into underlying native soils and there is the potential to inadvertently encounter intact archaeological materials. As such, there is a possibility that ground disturbing activities associated with the Project could result in a substantial adverse change in the significance of an archaeological resource. Impacts would be potentially significant and Mitigation Measure CUL-1, CUL-2 and CUL-3 are required to reduce impacts to a less than significant level.

Mitigation Measures

CUL-1 Workers Environmental Awareness Program

Prior to the commencement of Project-related, ground-disturbing activities, including, but not limited to, site clearing, grubbing, trenching, and excavation, a Worker's Environmental Awareness Program (WEAP) shall be conducted for all Project personnel working on the Project Site. The WEAP shall be prepared and conducted under the direction of a qualified archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service [NPS] 1983). The WEAP training shall include a description of the types of cultural material that may be encountered, cultural sensitivity issues, the regulatory environment, and the proper protocol for treatment of the materials in the event of a find.

CUL-2 Archaeological Monitoring

Archaeological monitoring shall be performed under the direction of an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service [NPS] 1983). The archaeological monitor will have the authority to halt and redirect work should any cultural resources be identified during monitoring. Archaeological monitoring may be reduced to spot-checking or eliminated at the discretion of the qualified archaeologist, in consultation with the lead agency, as warranted by conditions such as encountering bedrock or sediments being excavated as fill. If monitoring is reduced to spot-checking, spot checks shall occur when ground-disturbance moves to a new location within the APE and when ground disturbance will extend to depths not previously reached (unless those depths are in bedrock).

CUL-3 Unanticipated Discovery of Cultural Resources

In the event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the find shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the resource. If the resource is determined by the qualified archaeologist to be prehistoric, then a Native American representative shall also be contacted by the County to participate in the evaluation of the resource. The qualified archaeologist will evaluate the resource for its eligibility as a historical resource or unique archaeological resource under CEQA through appropriate means, such as archaeological testing and/or additional research, based on the nature of the find. If the resource proves to be eligible for the CRHR, the resource shall be avoided and preserved in place. If avoidance of the resource via Project redesign is determined to be infeasible, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of the CCR Guidelines Section 15126.4(b)(3)(C). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to cultural resources related to the resource. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. The County shall review and approve the treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the California Historical Resources Information System, per CCR Guidelines Section 15126.4(b)(3)(C).

Significance After Mitigation

Implementation of Mitigation Measures CUL-1 through CUL-3 would reduce potential impacts to archaeological resources to a less-than-significant level by requiring site personnel to participate in a Workers Environmental Awareness Program, led by a qualified archaeologist; implementing archaeological monitoring during ground-disturbing activities; and implementing standard procedures in the event archaeological resources are unexpectedly encountered during ground-disturbing activities.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the Project disturb any human remains, including those interred outside of formal cemeteries?

No human remains are known to be present within the Project Site. However, the discovery of human remains is always a possibility during ground-disturbing activities, which would be required for the Project and include grading, trenching and excavation for utility poles, equipment pads and fence posts. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code (PRC) Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the Native American Heritage Commission (NAHC), which would determine and notify a Most Likely Descendent. The Most Likely Descendent has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the Most Likely Descendent does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance. With adherence to these regulations, the Project would have a less-than-significant impact related to disturbance of human remains.

LESS-THAN-SIGNIFICANT IMPACT

6 Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the Project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?	☐	☐	■	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	■

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

Construction and Decommissioning

Construction and future decommissioning of the Project would result in fuel (diesel and gasoline) and electricity consumption from the use of construction tools and equipment, vendor truck trips, and vehicle trips generated from workers traveling to and from the Project Site[7]. The consumption of energy would be temporary in nature, as construction and decommissioning would each last approximately six months, and would not present a significant demand for available supplies. The Project Site features no unusual Project characteristics or construction or decommissioning processes that would require inordinately higher amounts of energy than for neighboring comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). In addition, as required by 13 CCR Section 2485, idling times of construction vehicles are limited to no more than five minutes, thereby minimizing, or eliminating unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Equipment employed in the construction and future decommissioning of the Project would therefore not result in wasteful, inefficient, or unnecessary consumption of energy resources, and impacts during construction and future decommissioning would be less-than-significant.

Operation

Once the Project is operational, up to 3 MW of energy would be generated at the ground-mounted solar energy generation facility. Electricity would be required during operation and maintenance, such as for appurtenant electrical equipment. In addition, gasoline and diesel fuel would be required for occasional maintenance equipment and trips. As described under *Description of Project,* routine maintenance is expected to necessitate approximately two workers to travel to the facility up to 20 times per year, including two annual panel washings, each involving two light to medium duty trucks, four employees, and a water buffalo. Operations would also require up to two workers in a medium-duty utility truck to visit the substation up to 20 times per year and a crew may need to periodically visit the site to address any maintenance issues picked up by the remote monitoring system. The associated fuel consumption would be minimal and would not be considered an inefficient use of fuel, given that it would be associated with a renewable energy generation facility. Thus, although irreversible commitments of small quantities of nonrenewable resources would occur during operation of the Project, the amount of diesel and gasoline fuel consumed during Project operation would be relatively minimal and would not be considered an inefficient use.

[7] Equipment mix by construction activity as well as worker, vendor, and hauling trips can be found in Appendix A.

Furthermore, as a solar facility sited to generate renewable energy, the Project would result in a beneficial impact to renewable energy availability within the state. Therefore, due to the inherent nature of the Project as a solar facility, the Project would not result in a wasteful use of energy. Operational impacts related to wasteful, inefficient, or unnecessary consumption of energy resources would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

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

The Project would assist the State in meeting its energy goals, including those identified in CARB's 2022 Scoping Plan Update, the Renewables Portfolio Standard, and Senate Bill (SB) 100 by implementing a solar energy generation facility sited to support future renewable energy Project, and thereby assisting in the increased supply of renewable solar energy within the state.

The Project would be consistent with the following specific electricity goals outlined in CARB's 2022 Scoping Plan Update:

- Scale up renewable energy and electric grid infrastructure to handle increased demand.
- Meet increased demand for electrification without new fossil gas-fired resources.

Additionally, the Project would be consistent with SB 100. SB 100 accelerated the state's Renewables Portfolio Standard Program by increasing California's procurement of electricity from renewable sources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045. The Project would generate up to 3 MW of solar energy. Overall, the Project would increase the amount of renewable energy generated for the PG&E system that would be compliant with the Renewables Portfolio Standard Program. Contributing renewable energy to the existing transmission network would improve California's ability to supply renewable energy to end-use customers, specifically within the greater PG&E service area, and to achieve statewide renewable energy goals. The additional energy generated by the Project would be added to the power grid and would directly support energy goals under SB 100.

The SJVAPCD adopted the Climate Change Action Plan in August 2008. The Climate Change Action Plan directed the District Air Pollution Control Officer to develop guidance to assist lead agencies, Project proponents, permit applicants, and interested parties in assessing and reducing the impacts of Project specific GHG emissions on global climate change. In December 2009, the SJVAPCD adopted the guidance: *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* and the policy: *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency* (SJVAPCD 2024). The guidance includes Best Performance Standards which focus on measures that improve energy efficiency. The Project would help facilitate the expansion of renewable energy into PG&E's energy mix which serves San Joaquin County. Therefore, the Project would help implement the guidance from SJVAPCD, and thereby would not conflict with their adopted policy and guidance documents.

Additionally, the San Joaquin County General Plan Public Health and Safety Element sets reduction targets and provides strategies to reduce greenhouse gas (GHG) emissions and associated impacts. In particular, Policy PHS-6.3 (GHG Reduction Strategies) states "The County shall promote greenhouse gas emission reductions by encouraging efficient farming methods (e.g., no-till farming, crop rotation, cover cropping); supporting the installation of renewable energy technologies; and protecting grasslands, open space, oak woodlands, riparian forest and farmlands from conversion to urban uses" (San Joaquin County 2016). The Project would help facilitate the expansion of renewable energy into PG&E's energy mix which serves San Joaquin County. Therefore, the Project would not conflict with the County's General Plan.

For the reasons described above, the Project would have no impacts related to conflicts with or obstruction of a State or local plan for renewable energy or energy efficiency.

NO IMPACT

7 Geology and Soils

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

The following analysis is based upon the Geotechnical Report prepared for the Project by ANS in April 2025 (Appendix D).

a.1. *Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?*

Alquist-Priolo Earthquake Fault Zones are regulatory zones established throughout California by the California Geological Survey. These zones identify areas where potential surface rupture along an active fault could prove hazardous and identify where special studies are required to characterize the fault rupture hazard potential to habitable structures. While there are no known active earthquake faults on the

Project Site, as delineated on the most recent DOC Alquist-Priolo Earthquake Fault Zoning Map, according to the Geotechnical Report and based on the 2023 National Seismic Hazard Map disaggregation analysis, the primary seismic sources affecting the Project Site are the West Tracy Fault, San Andreas Fault and Calaveras Fault. Secondary seismic sources include the Mount Diablo Thrust–South, Greenville Fault Zone and the Hayward Fault, with varying contributions at short and long periods(DOC 2021). Of these regional fault areas, the nearest active faults in the region include the West Tracy Fault, a southwest-dipping reverse fault located approximately 22 miles southwest of the Project area, and the Greenville Fault located approximately 39.7 miles southwest of the Project Site as demarcated by the DOC (DOC 2021). The Project is a solar facility that does not involve the construction of habitable structures or placement of permanent on-site personnel. Therefore, the Project would not directly or indirectly cause the risk of loss, injury, or death involving rupture of an Alquist-Priolo designated earthquake fault. No impact related to rupture of a known earthquake fault would occur.

NO IMPACT

a.2. *Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?*

There are no fault lines on the Project Site. The nearest active faults in the region include the West Tracy Fault, a southwest-dipping reverse fault located approximately 22 miles southwest of the area, and the Greenville Fault located approximately 39.7 miles southwest of the Project Site as demarcated by the DOC (DOC 2021). As determined in the Geotechnical Report prepared for the Project, the probability of a fault displacement within the Project boundary is considered low because no active faults or potentially active faults are mapped within the Project boundary.

The Project is an unmanned solar facility. The Project would be designed and constructed in accordance with the seismic safety requirements of the California Building Code (CBC), which is adopted as part of Title 8 Division 1 of the San Joaquin County Code. It requires that all improvements be constructed to withstand anticipated ground shaking from regional fault sources. The CBC requires that a licensed geotechnical engineer be retained to design the Project components to withstand probable seismically induced ground shaking and consolidate recommendations into a site-specific geotechnical report. The CBC requires that a final geotechnical investigation be performed after Project design plans are finalized and prior to construction, and that a final geotechnical report be completed to provide engineering and design requirements. All construction would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would comply with the seismic recommendations of a California-registered, professional geotechnical engineer contained in the geotechnical report in accordance with the CBC. The final structural design would be subject to approval and follow-up inspection by the City. Final design requirements would be provided to the on-site construction supervisor and the City Building Inspector to ensure compliance. Implementation of the applicable CBC requirements (including design requirements provided in a site-specific geotechnical report) and local agency enforcement would ensure that the Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Therefore, impacts related to ground shaking would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

a.3. *Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?*

a.4. *Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?*

c. *Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?*

The Project Site is relatively flat and surrounded by flat land, and therefore is not subject to landslide risk. Additionally, the Project Site is not located within a liquefaction zone (DOC 2021). The Project would not create steep slopes or otherwise increase the risk of landslides at the Project Site. Project design and construction would incorporate standard safety measures from the CBC to address potential seismic hazards, including lateral spreading, subsidence, liquefaction and collapse. Further, as detailed in the Geotechnical Report prepared for the Project, subsurface soils encountered in borings are not considered susceptible to liquefaction and seismic induced settlement is expected to be negligible due to the low potential of liquefaction. The potential for seismically induced slope instability is considered low due to the flat topographic setting of the site. Since soil liquefaction at the Project area is unlikely, the potential for both lateral spreading and lateral flow is also considered low (ANS 2025). Compliance with the CBC would ensure that the Project would result in less than significant impacts related to unstable soils and directly or indirectly causing the risk of loss, injury, or death related to liquefaction or landslides. Therefore, impacts related to seismic-related ground failure, liquefaction, landslides, lateral spread, subsidence, or collapse would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

b. *Would the Project result in substantial soil erosion or the loss of topsoil?*

Soil erosion is the removal of soil by water, wind, and gravity. Ground-disturbing activities associated with Project construction would include vegetation clearing, surface grading for the access road, installation of solar panel pile mounts, and installation of fencing. Construction of the Project would require minimal cut and fill of soils during ground disturbing activities. As further discussed in Section 10, *Hydrology and Water Quality,* the Project would be required to obtain coverage under a Construction Stormwater General Permit to comply with all established regulations of the National Pollutant Discharge Elimination System (NPDES) permitting program to control construction stormwater discharges. Compliance with the conditions of the Construction Stormwater General Permit would require the developer to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) to reduce potential erosion and loss of topsoil during Project construction activities. Typical Best Management Practices (BMP) required by a SWPPP would include covering of inactive stockpiles, silt fences and gravel bag berms to trap sediments, inlet protection, and slope stabilization to limit discharge of eroded soils from the construction site and sedimentation of surface waters off-site. Pursuant to Title 5 Division 10 of the San Joaquin County Code, all applicable BMPs are required to be implemented to reduce erosion and other stormwater impacts. With adherence to these State and local regulations, the Project would not result in substantial soil erosion or the loss of topsoil, and this impact would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

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

The Project Site is underlain by Boggiano clay loam, 0 to 2 percent slopes, and Cogna loam, 0 to 2 percent slopes (USDA NRCS 2025). Cogna loam, 0 to 2 percent slopes, has a low clay content, which is indicative of a low shrink-swell potential. Boggiano clay loam, 0 to 2 percent slopes, has a moderate clay content, which is indicative of a moderate shrink-swell potential (USDA NRCS 2025). The Geotechnical Report prepared for the Project confirms this, stating that the Swelling Clays Map of the Conterminous United States maps the Project Site as having generally less than 50 percent clay with moderate to slight swelling potential. However, based on laboratory testing on selected samples, native cohesive soils generally consist of medium plasticity clays and low plasticity silts, indicating a low risk of swelling soils (ANS 2025). Although the Project does not involve the construction of habitable structures or placement of permanent on-site personnel, it would still be required to comply with San Joaquin County Code Title 8, which adopts the California Building Code by reference, because the Project requires a building permit

from the County. Chapter 18 of the California Building Code provides criteria for geotechnical and structural considerations for design and installation of foundation systems, as well as requirements for soil investigations and site preparation (also refer to the discussion under criterion a2). With adherence to the California Building Code, impacts related to expansive soil would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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

The Project does not include septic tanks or alternative wastewater disposal systems. Therefore, no impact would occur.

NO IMPACT

f. *Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., trackways, imprints, burrows, etc.). Paleontological resources are not found in "soil" but are contained within the geologic deposits or bedrock that underlies the soil layer. Typically, fossils are greater than 11,700 years old (i.e., Pleistocene or older) and are typically preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions (Society of Vertebrate Paleontology [SVP] 2025). Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on several factors. It is possible to evaluate the potential for geologic units to contain scientifically important paleontological resources, and therefore evaluate the potential for impacts to those resources and provide mitigation for paleontological resources if they are discovered during construction of a development project.

Rincon evaluated the paleontological sensitivity of the geologic units that underlie the Project Site to assess the Project's potential for significant impacts to scientifically important paleontological resources. The analysis was based on the results of a review of existing information in the scientific literature regarding known fossils within geologic units mapped at the Project Site. In the absence of other sensitivity criteria required by certain federal, state, or local regulatory agencies, the Society of Vertebrate Paleontology's Fossil Prediction Map System (FPMS) is used to assign paleontological sensitivity to geologic units (Society of Vertebrate Paleontology [SVP] 2025). FPMS assignments are based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. Fossil occurrences are correlated with the geologic units that contain them, so the history of a geologic unit in producing fossils can be used to predict its potential for producing fossils in the future. The FPMS is a 5-tier scale ranging from FPMS 1 (Very Low Potential) to FPMS 5 (Very High Potential) geologic units along with other rankings for geologic units with unknown potential or areas covered by water or ice. Following the literature review, a paleontological sensitivity classification was assigned to each geologic unit mapped within the Project Site. This criterion is based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units.

The Project is located in the Great Valley geomorphic province (California Geological Survey 2002). The Great Valley is an elongate lowland approximately 50 miles wide and 400 miles long. It is bounded to the east by the Sierra Nevada Range and to the west by the Coast Range. A relatively undeformed basin, the Great Valley rises from about sea level to approximately 400 feet in elevation at the north and south ends. The northern portion of the valley, referred to as the Sacramento Valley, is drained by the Sacramento River, while the southern portion of the valley, referred to as the San Joaquin Valley, is drained by the San

Joaquin River. Consequently, the Great Valley is predominantly alluvial, flood, and delta plains formed by these two major river systems (Weissmann et al. 2005).

The Project is located in the *Linden* United States Geological Survey 7.5-minute topographic quadrangle(s). The geology of the region surrounding the Project was mapped by Dawson (2009), who identified a single geologic unit, the Modesto Formation, underlying the Project Site.

The Modesto Formation underlies the entire Project Site. The Modesto Formation is late Pleistocene in age and consists of poorly consolidated, poorly sorted sandy sediments with minor amounts of gravel and silt (Dawson 2009). The Modesto Formation has produced scientifically significant resources including mammoth (*Mammuthus*), ground sloth (*Megalonyx*), and bison (*Bison*) (Jefferson 2010; University of California Museum of Paleontology 2026). Although the Modesto Formation is known to preserve paleontological resources, such discoveries are not incredibly common given the wide geographic distribution of this geologic unit. Therefore, the Modesto Formation is assigned FPMS 3 (Moderate) paleontological sensitivity. However, aerial imagery shows the Project Site has been previously used for agriculture, which is assumed to have disturbed the uppermost 2 feet of sediment. Disturbed and/or fill sediments are not considered paleontologically sensitive, so they are assigned FPMS 1 (Very Low) paleontological sensitivity. Therefore, the Project Site is assigned FPMS 1 (Very Low) paleontological sensitivity from the surface to 2 feet below the surface and FPMS 3 (Moderate) paleontological sensitivity greater than 2 feet below the surface.

Ground-disturbing activities for the Project will include driving piles to mount photovoltaic panels, trenching for underground electric transmission cables, and, potentially, excavations for drainage infrastructure. Pile-driving does not produce spoils capable of preserving significant paleontological resources, so this activity will not significantly impact paleontological resources. Trenching for underground cables and potential excavations for infrastructure would require excavations up to 5 feet below the surface. Therefore, these activities would likely impact previously undisturbed sediments with FPMS 3 (Moderate) paleontological sensitivity and could significantly impact paleontological resources. This impact related to unique paleontological resources or unique geologic features would be potentially significant.

Mitigation Measures

GEO-1 Unanticipated Fossil Discovery

Paleontological Worker Environmental Awareness Program. Prior to the start of construction, a Paleontological Principal Investigator, as defined by the Society of Vertebrate Paleontology (SVP), or their designee shall prepare and conduct a paleontological Worker Environmental Awareness Program (WEAP) training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction personnel. The WEAP shall discuss the potential to discover paleontological resources in the Project Site, legal obligations to protect paleontological resources, examples of paleontological resources that may be found in the Project Site, procedures in case a paleontological resource is discovered, and contact information for the Paleontological Principal Investigator.

Unanticipated Discovery of Paleontological Resources. The Project Sponsor shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement: If a potential fossil is discovered during Project construction, construction activity within 50 feet of the find shall cease until the discovery is examined by a Paleontological Principal Investigator.

If the find is determined to be significant, the Paleontological Principal Investigator shall direct all mitigation efforts related to paleontological resources consistent with SVP standards, which may include, but are not limited to: paleontological monitoring; fossil salvage, preparation, and curation; and reporting to summarize the paleontological mitigation efforts that would be submitted to the lead CEQA agency.

Significance After Mitigation

Mitigation Measure GEO-1 would ensure that impacts to paleontological resources would be less-than-significant by requiring the preparation and implementation of a Paleontological Worker Environmental Awareness Program and including a standard inadvertent discovery clause for the Project. Implementation of Mitigation Measure GEO-1 would reduce potential impacts to paleontological resources to less than significant level and would effectively mitigate the Project's impacts to these resources through the recovery, identification, and curation of previousiy unrecovered fossils. Therefore, impacts would be less than significant after mitigation.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	■	☐
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	■	☐

The following analysis is based upon the calculations found in Appendix A.

a. *Would the Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?*

Construction, operation, and decommissioning of the Project would generate greenhouse gas (GHG) emissions. This analysis considers the combined impact of GHG emissions from construction, operation, and decommissioning.

Construction and Decommissioning Emissions

Construction and decommissioning of the Project would result in GHG emissions, which are primarily associated with use of off-road equipment, on-road vendor and haul trucks, and worker vehicles. GHG emissions associated with the Project were modeled in CalEEMod. As shown in Table 6, construction and decommissioning of the Project would result in a total of approximately 325 metric tons (MT) of carbon dioxide equivalents (CO_2e) for the 6-month construction period. Emissions were then amortized over the lifetime of the Project (i.e., 35 years). Amortized emissions would be approximately 9 MT CO_2e per year. It is assumed that decommissioning GHG emissions would be similar to construction GHG emissions. In actuality, decommissioning emissions would be lower than construction emissions due to the reduced earthwork required and cleaner equipment available during decommissioning of the Project.

Table 6 Estimated Construction GHG Emissions

Year	Project Emissions (MT/yr CO_2e)
Total	325
Total Amortized over 35 Years	9

MT = metric tons; CO_2e = carbon dioxide equivalents
See Appendix A for CalEEMod worksheets.

Operational Emissions

The Project would generate GHG emissions during operation from minimal area source, energy consumption, and mobile emissions.[8] As shown in Table 7, the Project would generate approximately 21 MT of CO_2e per year from the operation of the Project.

[8] Area sources for this Project refer to consumer products (such as aerosol cleaners), and architectural coating (maintenance re-coating activities for the Project).

Over the Project's up to 35-year operational life—including amortized construction and decommissioning activities—total GHG emissions are estimated at 750 MT CO_2e (21.4 MT CO_2e times 35 years). The Project is expected to offset approximately 9,836 MT CO_2e over the same period, or 246 MT CO_2e annually through the generation of renewable energy. Therefore, on an annual basis the Project would result in a net decrease in 354 MT CO_2e.

Table 7 Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions (MT CO_2e/year in metric tons)
Construction	9
Operational	
Mobile	8
Area	<1
Energy	3
Water	<1
Waste	<1
Refrigerants	<1
Total	**21**
Annual GHG Offset by Solar Panels	**246**
Net Annual GHG Emissions	**(225)**

MT = metric tons; CO_2e = carbon dioxide equivalent

May not add directly due to rounding. Parenthetical notation indicates a negative number.

See Appendix A for CalEEMod worksheets.

By generating up to 3 MW of solar energy, the Project would support growing renewable energy demand and is expected to result in a net reduction in GHG emissions. Electricity supplied to meet consumer demand is generated from both renewable sources (such as solar) and non-renewable sources (such as natural gas combustion). Additional renewable generation reduces the need for electricity produced from non-renewable sources, which generates GHG emissions. The estimated displaced emissions represent the amount of GHGs that would otherwise be generated by non-renewable energy sources but are avoided due to the Project. Impacts related to the generation of GHG emissions would be less than significant. Because the Project would generate electricity from renewable sources and would offset GHG emissions associated with construction and operation of the Project, the Project would result in net negative annual GHG emissions and an overall reduction in GHG emissions relative to existing conditions. Impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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

The Project is a renewable energy project and would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. California's primary GHG reduction framework—such as Assembly Bill (AB) 32, Senate Bill (SB) 32, and the 2022 Scoping Plan prepared by the California Air Resources Board (CARB)—focuses on reducing GHG emissions through increased energy efficiency, transportation improvements, and expanded use of renewable energy sources.

[9] Calculations for GHG offsets may be found in Appendix A. Emissions reductions assumes a robust renewable mix, with the energy generated by the Project only displacing emissions from natural gas and coal.

The Project consists of a 3 MW solar photovoltaic facility that would generate clean, renewable electricity and displace electricity that would otherwise be produced by fossil fuel–based generation. As such, the Project directly supports statewide goals to increase renewable energy generation and reduce reliance on GHG-intensive energy sources.

In addition, the Project would be consistent with the San Joaquin County 2035 General Plan, which serves as the County's framework for reducing GHG emissions through land use planning, energy efficiency, and promotion of renewable energy systems (San Joaquin County 2016). For example, the Project would be consistent with Goal LU-6.8, *Sustainable Technologies*, and Goal NCR-H, *Solar Energy Ordinance*, as it would involve installation of solar arrays to generate renewable electricity. The Project also would support Goal IS -3.6, *Clean Energy and Fuel Sources*, and Goal NCR-5.2, *Alternative Energy*, as it would provide a source of renewable energy for operations throughout the County. By providing up to 4 MW of renewable energy, the Project would contribute to reducing GHG emissions and advancing California's and the County's climate policy objectives.

Therefore, the Project would not conflict with applicable GHG reduction plans, policies, or regulations, and impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	■	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	☐	☐	☐	■
d. Be located on a site that is included on a list of hazardous material 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 in 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?	☐	☐	☐	■

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

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

Construction and operation of the proposed 3 MW solar photovoltaic facility would involve the limited use of hazardous materials typical of similar construction and maintenance activities. These materials would primarily include fuels (e.g., diesel), lubricants, hydraulic fluids, and small quantities of solvents or cleaning agents. During operation, solar photovoltaic systems do not require fuel combustion or chemical processing, and therefore would not involve the routine use of substantial quantities of hazardous materials.

The transport, handling, storage, and disposal of hazardous materials associated with the Project would be subject to a comprehensive regulatory framework. At the federal level, hazardous wastes and materials are regulated under the Resource Conservation and Recovery Act (RCRA; 40 CFR Parts 260–273), which governs the generation, transport, and disposal of hazardous waste. Worker safety and hazardous materials handling during construction are regulated under Occupational Safety and Health Administration standards (29 CFR Part 1926). In addition, hazardous materials transportation is regulated by the U.S. Department of Transportation (49 CFR Parts 171–180).

At the state level, hazardous materials management is governed by the California Hazardous Waste Control Law (Health and Safety Code Section 25100 et seq.) and the California Code of Regulations, Title 22, which establishes requirements for hazardous waste identification, handling, and disposal. The California Environmental Protection Agency's Unified Program further regulates hazardous materials through the Hazardous Materials Business Plan (HMBP) requirements (Health and Safety Code §25500 et seq.) and the California Accidental Release Prevention (CalARP) Program. Locally, the San Joaquin County Environmental Health Department, acting as the Certified Unified Program Agency, enforces these programs, including the HMBP, Hazardous Waste Generator Program, and petroleum storage requirements. Facilities handling reportable quantities of hazardous materials must prepare and maintain an HMBP to ensure proper management and emergency response procedures. However, the Project would not require handling reportable quantities of hazardous materials.

There is a limited potential for accidental releases of hazardous materials during construction, such as spills of fuel or hydraulic fluids from construction equipment or storage containers. However, such incidents would be short-term, localized, and minimized through implementation of standard best management practices, including proper storage and labeling, secondary containment, spill prevention measures, and worker training.

Federal and state regulations require that construction activities implement spill prevention and response procedures, including measures to prevent the discharge of pollutants from spills and leaks (e.g., as required under federal construction stormwater regulations, 40 CFR Section 450.21). In addition, applicable spill prevention requirements, such as the Spill Prevention, Control, and Countermeasure (SPCC) Rule (40 CFR Part 112), would apply where relevant.

During operation, the solar facility would not use or store substantial quantities of hazardous materials, and therefore would not present a meaningful risk of accidental release. Solar panels generate electricity without combustion or chemical reactions and do not pose a risk of large-scale hazardous material releases. Routine maintenance activities would involve only small quantities of materials, which would be managed in accordance with applicable regulations and manufacturers' instructions.

In the unlikely event of an accidental release, adherence to regulatory requirements and BMPs—including spill containment, cleanup procedures, and emergency response planning—would ensure that impacts are minimized and promptly addressed.

Decommissioning activities would similarly involve standard construction practices with minimal hazardous material use, and would be subject to the same regulatory controls described above.

Therefore, the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or 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 and related impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

c. *Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?*

There are no existing or proposed schools within 0.25 mile of the Project Site. The nearest school to the Project Site is Linden High School, located approximately 1.7 miles to the south-southeast. In addition, the Project would not involve the handling of hazardous materials and would not generate hazardous

emissions. There would be no impact related to the presence of hazardous materials in the vicinity of an existing or proposed school.

NO IMPACT

d. Would the Project be located on a site that is included on a list of hazardous material 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?

Government Code Section 65962.5 requires the California Environmental Protection Agency to develop an updated Hazardous Waste and Substances Sites List, also known as the Cortese List. The California Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List; other state and local government agencies are also required to provide additional hazardous material release information for the Cortese List. The following resources were reviewed on March 25, 2026, to obtain hazardous material release information:

- SWRCB GeoTracker database (SWRCB 2026)
- California Department of Toxic Substances Control EnviroStor database (DTSC 2026)

Based on the database review, the Project Site and properties in its immediate vicinity are not included on the list of hazardous material sites compiled pursuant to Government Code Section 65962.5. According to the SWRCB GeoTracker database, the nearest listing is a Leaking Underground Storage Tank (LUST) cleanup site, located approximately 1.7 miles southeast of the Project Site. However, the status of the LUST site is "Completed – Case Closed." Therefore, no impact related to hazardous materials sites would occur.

NO IMPACT

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

The Project Site is not located within two miles of a public or public use airport. The closest airport to the Project Site is the Stockton Metropolitan Airport, located approximately 12.7 miles southwest of the Project Site. According to the Airport Land Use Compatibility Plan for the Stockton Metropolitan Airport, the Project Site is not located within the Airport Influence Area of the Stockton Metropolitan Airport (San Joaquin County 2018). Therefore, the Project would not result in a safety hazard or excessive noise for people residing or working in the area, and no impact related to an adopted airport land use plan would occur.

NO IMPACT

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

The Project Site is within the jurisdiction of the San Joaquin County Local Hazard Mitigation Plan (San Joaquin County 2023).

The Project would not involve the development of structures or infrastructure that would potentially impair implementation of or physically interfere with this plan. The proposed 15.2-acre solar facility would be developed on a relatively small, discrete site and would not introduce substantial new population, traffic, or barriers that could hinder emergency access or evacuation. The Project would include an internal access road that would be designed to accommodate emergency vehicles and would maintain compliance with applicable fire code requirements. Driveway access to the Project Site from the driveway either on E. Comstock Road or N. Duncan Road would be maintained at all times to ensure that emergency responders can enter and exit the Site without obstruction in compliance with Section 9-409.430(9) of the San Joaquin County Code.

During construction, there may be a temporary increase in traffic from construction workers and equipment; however, construction activities would be short-term and would not substantially affect surrounding roadway operations or regional evacuation routes. Specifically, Project construction and decommissioning would not require any roadway or lane closures. Construction equipment and construction worker vehicles would be staged on the Project Site and would not result in substantial delays on East Comstock Road.

Operation of the solar facility would generate minimal traffic, limited to periodic maintenance visits, and would not materially affect roadway capacity or circulation patterns. The Project would not require road closures, permanent re-routing of traffic, or installation of structures that would obstruct existing public streets or designated emergency evacuation routes.

The minimal, infrequent vehicle trips associated with construction and operation and maintenance activities would not disturb traffic patterns on East Comstock Road or Duncan Road in such a manner that could affect emergency response or evacuations.

As required by San Joaquin County Code Section 9-409.430(b)(7), a Fire Prevention Plan would be developed and implemented for the Project, which would be approved by the County Fire Marshall and local fire protection district. The Fire Prevention Plan would include procedures including, but not limited to, emergency vehicle access and turnaround at the Project Site, vegetation management, and fire break maintenance around all structures.

Because the Project would not obstruct roadways, would maintain adequate site access for emergency vehicles, and would not interfere with regional evacuation routes or emergency response operations, it would not impair implementation of adopted emergency response or evacuation plans, and potential impacts on emergency response would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

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

As described in Section 20, *Wildfire*, the Project Site is not within a State Responsibility Area or lands classified as a Very High Fire Hazard Severity Zone, as delineated by the California Department of Forestry and Fire Protection's (CAL FIRE) Fire Hazard Severity Zone Viewer (CAL FIRE 2024). The Project Site is not located within a fire hazard severity zone (FHSZ), and is within a Local Responsibility Area (LRA). The nearest FHSZ is a moderate FHSZ located approximately 3.6 miles east-northeast of the Project Site, on the north side of North Podesta Lane. Vacant lands and existing agricultural development, roads, and two aqueduct crossings separate the moderate fire hazard zone from the Project Site. The Project would also be operated remotely, which would eliminate the potential for exposure of any on-site employees to wildland fire risks. The Project Site is located within the central valley in an area of predominately agricultural use, and is not located in the vicinity of wildlands. Thus, the Project would not expose people or structures to a risk of loss, injury, or death involving wildland fires. No impact related to wildland fires would occur.

NO IMPACT

10 Hydrology and Water Quality

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

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

Construction activities associated with the Project have the potential to affect water quality because stormwater runoff over disturbed soil surfaces can pick up sediment, debris, and contaminants and convey them to downstream receiving waters. Ground-disturbing activities such as clearing, grading, trenching, and foundation installation would temporarily increase the potential for erosion and sedimentation. If construction or future decommissioning occurs during the rainy season or storm events, exposed soils could be mobilized and transported off-site. In addition, construction materials such as fuels, lubricants, paints, solvents, and concrete-related waste could be spilled or leaked and carried in stormwater runoff if not properly managed.

No new water supply or wastewater infrastructure would be constructed as part of the Project. However, construction and future decommissioning activities would generate typical construction-related pollutants (e.g., sediment, debris, and trace amounts of chemicals) that could affect surface water quality in the absence of appropriate controls.

Because the Project would disturb more than one acre, it would be required to comply with the State Water Resources Control Board's NPDES Construction Stormwater General Permit (Order No. 2022-0057-DWQ). Compliance with this permit requires preparation and implementation of a SWPPP that identifies potential pollutant sources and prescribes BMPs to minimize pollutant discharge. BMPs would include, but are not limited to, erosion and sediment control measures (e.g., silt fencing, stabilized construction entrances, and soil stabilization) and good housekeeping practices (e.g., proper material storage, spill prevention, and waste management) designed to prevent off-site transport of pollutants.

In addition, the Project would be required to comply with San Joaquin County Code Title 5, Division 10 (Stormwater Management and Discharge Control), which prohibits unauthorized discharges to the stormwater system, requires implementation of BMPs, and mandates spill prevention and response measures. Adherence to these regulatory requirements would ensure that construction-related discharges do not violate applicable water quality standards or waste discharge requirements.

Operational impacts on water quality would be minimal. Operation of the solar facility would not involve process wastewater discharges or the routine use of substantial quantities of hazardous materials. Periodic panel washing would use small water quantities that would percolate into the soil onsite and would not runoff off site. Additionally, operational water use would be required to comply with applicable County stormwater regulations and BMPs to further prevent runoff-related impacts. As a result, operation of the Project would not result in stormwater pollution or degradation of surface or groundwater quality.

With implementation of required regulatory measures, including preparation and adherence to a SWPPP and compliance with state and local stormwater regulations, the Project would not violate water quality standards or waste discharge requirements, nor would it otherwise substantially degrade surface or groundwater quality, and impacts would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

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

The Project Site overlies the Eastern San Joaquin Subbasin, which is part of the San Joaquin Valley Groundwater Basin (California SWRCB 2006). The Eastern San Joaquin Subbasin is not adjudicated, although it is in condition of critical overdraft (DWR 2026). The subbasin is managed through the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan which was adopted by the Eastern San Joaquin Groundwater Authority in November 2024.

The Project would require a water supply during construction, operation, and decommissioning. During construction and decommissioning, nominal amounts of water would be used for dust suppression and earthwork. During operation, solar panel washings would occur twice per year, generating an annual water demand of approximately 65,000 gallons. Water for these purposes would be trucked to the Project Site from an external source. While groundwater from the San Joaquin Valley Basin supplies approximately 30 percent of water in the region (USGS 2024), groundwater level measurements within the Eastern San Joaquin Subbasin have been in continuous decline over the last 40 years (San Joaquin County 2014). The amount of water required during construction and decommissioning of the Project would be temporary and nominal. Water to be used during operation would be obtained from an external source, and would not affect groundwater supplies directly within the Project area. Therefore, the Project would not substantially decrease groundwater supplies or impede sustainable groundwater management of the basin.

The Project would not substantially increase impervious surface areas on the Project Site such that development of the site would affect groundwater recharge. According to the Geotechnical Report prepared for the Project (Appendix D), groundwater was not observed within any of the conducted soil borings at the time of geotechnical field investigation. However, it is noted that groundwater conditions fluctuate due to seasonal and climate influences, and the region is generally characterized by a shallow groundwater table. Rainfall may accumulate water on site due to the fine-grained nature of native soils and as such, dewatering may be necessary for shallow excavations (ANS 2025). Water discharge would be managed in compliance with the Construction Stormwater General Permit, site specific SWPPP and applicable regulations contained within the San Joaquin County Code. Still, Project construction and decommissioning is not anticipated to require substantial amounts of groundwater dewatering such that regional supplies or sustainable groundwater management of the basin would be inhibited. Project operation would not extract groundwater on-site. Therefore, the Project would not substantially interfere with groundwater recharge.

Overall, the Project would not substantially decrease groundwater supplies or substantially interfere with groundwater recharge and, therefore, impacts to groundwater management would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

c.(i) *Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?*

c.(ii) *Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

c.(iii) *Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would 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?*

c.(iv) *Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?*

The Project Site is generally flat. Under current conditions, water on the Project Site drains towards the Calaveras River, located approximately 450 feet northeast of the Project Site. The Project would not substantially increase impervious surface areas on the Project, as the ground beneath the proposed solar array components would be left in existing conditions. To prepare the Project Site for use as solar facility, site clearing, excavation, and grading would occur. However, the Project would not involve any activities which could alter drainage patterns on site or alter the course of nearby waterways.

Given the Project Site's relatively flat topography, erosion during construction and decommissioning is unlikely to be substantial. However, the implementation of the BMPs required for the previously discussed SWPPP would control any erosion and siltation during construction. Hazardous materials used during construction, operation, maintenance, and decommissioning would be properly stored, used, and disposed of as discussed under criterion 9(a).

Because pervious surfaces would continue to exist at the Project Site following Project implementation, natural stormwater infiltration would continue. Therefore, any potential drainage alterations associated with the Project would not result in substantial erosion or siltation and would not provide substantial additional sources of polluted runoff and would not exceed the capacity of existing or planned stormwater drainage systems.

According to the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map, the Project Site is located in Zone X, an area of minimal flood hazard (FEMA 2009). Given that the Project is not located in a flood hazard area, would not increase the rate of surface runoff, and would only result in a marginal increase in runoff volume, the Project would not impede or redirect flood flows or result in on- or off-site flood impacts.

Overall, impacts associated with existing drainage patterns for the Project would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

d. *In flood hazard, tsunami, or seiche zones, would the Project risk release of pollutants due to Project inundation?*

As described above under criterion 10(c), the Project Site is not located within a flood hazard zone. The Project Site is located approximately 80 miles east of the Pacific Ocean and 12.1 miles southwest of the nearest lake, the Camanche Reservoir. Accordingly, the Project Site is not subject to inundation from tsunamis or seiche, and no impact would occur.

NO IMPACT

e. *Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

The Project Site is within the jurisdiction of the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin and the Eastern San Joaquin Groundwater Subbasin Groundwater Sustainability Plan (California RWQCB 2019, Eastern San Joaquin Groundwater Authority 2024). As described in criterion 10(a), the Project would not violate water quality standards with adherence to regulations such as the NPDES Construction Stormwater General Permit and the San Joaquin County Code. The water quality goals of the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin are enforced through these policies. With adherence to these regulatory requirements, the Project would not interfere with or obstruct achievement of the water quality goals within the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin.

As described under criterion 10(b), the Project would require water usage during construction, operation, and future decommissioning. Water to be used for these phases would be trucked to the Project Site from an external source. If groundwater were provided to the Project, the groundwater would be distributed in compliance with the management requirements of the *Eastern San Joaquin Subbasin Groundwater Sustainability Plan*. Accordingly, the Project's use of groundwater would not conflict with or obstruct implementation of a sustainable groundwater management plan. Therefore, this impact related to existing water quality control plans or sustainable groundwater management plans would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the Project:				
a. Physically divide an established community?	☐	☐	☐	■
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	■	☐

a. Would the Project physically divide an established community?

Types of projects that have the potential to divide an established community include the construction of a new freeway or highway through an established neighborhood. The Project consists of the construction, operation, and decommissioning of a ground-mounted solar energy generation facility on an undeveloped agricultural parcel. The Project Site is surrounded on all sides by active agriculture, orchards, and associated rural residences. The Project does not involve construction of freeways, walls, or other features that would divide an established community. Therefore, no impact related to the division of an established community would occur.

NO IMPACT

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

The applicable plans and policies relating to a conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to, the General Plan and County Development Title) adopted for the purpose of avoiding or mitigating an environmental effect are summarized below.

San Joaquin County General Plan

Community Development Element

The Project Site is located within the jurisdiction of the County's General Plan and subject to the policies of the General Plan Land Use Element. The Project is consistent with the goals and policies of the General Plan related to renewable energy development and continued agricultural land stewardship due to the fact that it would not permanently alter the land such that agricultural uses would not be feasible o site and due to the renewable energy it will generate over the course of its 35 years lifespan. Additionally, there are no applicable Master Plans, Specific Plans, or Special Purpose Plans governing the Project Site. Therefore, the proposed use is consistent with the General Plan and all applicable County-adopted plans.

Public Facilities and Services

The County's Public Facilities and Services Element includes goals and policies related to transportation and mobility, and infrastructure and services. The Project would not result in substantial impacts to transportation and mobility or public infrastructure and services. Refer to Environmental Checklist Section 17, *Transportation,* for further discussion on the Project's potential impacts to transportation and mobility. Refer to Environmental Checklist Section 15, *Public Services,* and Section 19, *Utilities and Service Systems,* for further discussion on the Project's potential impacts to public infrastructure and services.

Public Health and Safety

The County's Public Health and Safety Element includes policies related to air quality, geologic hazards, flooding, hazardous materials, noise, and wildfire. These environmental topics have been addressed under the applicable section throughout this analysis. For the reasons discussed in those sections, the Project would not conflict with the Public Health and Safety Element of the General Plan.

Natural and Cultural Resources Element

The County's Natural and Cultural Resources Element contains policies addressing biological resources, water quality, energy, cultural and historic resources, scenic resources, and recreation. These environmental topics have been addressed under the applicable section throughout this analysis. In cases where impacts were identified as potentially significant, mitigation is identified to reduce impacts to a less-than-significant level. For the reasons discussed in those sections, the Project would not conflict with the Natural and Cultural Resources Element of the General Plan.

San Joaquin County Code

The Project Site is zoned AG-40 (General Agriculture; 40-acre minimum parcel). Pursuant to the San Joaquin County Development Title Update, most recently updated in June of 2025, utility scale solar generation facilities are permitted in the A/G zone with approval of a Conditional Use Permit by the Planning Commission(San Joaquin County 2025b). The Project must comply with the applicable provisions set forth in the County Development Title, unless relief is granted through a variance. Additionally, the Project would satisfy Code Section 9-409.430(b)(5) requirement regarding farmland protection by returning the land to its current state after Project decommissioning which would allow for future agricultural uses on the land as described under threshold a in Section 2, *Agriculture and Forestry Resources*. Therefore, the Project would not conflict with the San Joaquin County Code.

In summary, the Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect and this impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

12 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the Project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	■
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?	☐	☐	☐	■

a. *Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

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

The San Joaquin County General Plan indicates there are sand and gravel deposits of regional significance in the county, primarily in rivers and creeks (San Joaquin County 2016). The Project Site is located within the Stockton-Lodi Production-Consumption Region for Portland Cement aggregate site (DOC 2022). There are no known mineral resources or resource recovery sites on or in the vicinity of the Project Site (DOC 2016). Further, the Project would not involve substantial excavation or mineral extraction. Therefore, the Project would not result in the loss of availability of a known mineral resource or locally important mineral resource recovery site and, as such, there would be no impact related to mineral resources.

NO IMPACT

13 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the Project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	■	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
c. For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	■

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

Construction and Decommissioning

The significance of construction noise impacts is determined through compliance with the San Joaquin County Code. Per Section 9-404.020(c), noise associated with construction and decommissioning, provided such activities do not take place before 6:00 a.m. or after 9:00 p.m. on any day or at any time on Sundays and federal holidays, is exempt from the County's noise ordinance. Project construction and decommissioning would not occur within these hours or on Sundays or federal holidays. Therefore, construction and decommissioning noise impacts would be less than significant. Construction and decommissioning noise levels are provided below for informational purposes.

Construction noise was estimated using the FHWA Roadway Construction Noise Model (RCNM). RCNM predicts construction noise levels for a variety of construction operations based on empirical data and the application of acoustical propagation formulas. Using RCNM, construction noise levels were estimated at the noise-sensitive receptor nearest to the Project Site. RCNM provides reference noise levels for standard construction equipment, with an attenuation rate of 6 dBA per doubling of distance for stationary equipment.

Variation in power imposes additional complexity in characterizing the noise source level from construction equipment. Power variation is accounted for by describing the noise at a reference distance from the equipment operating at full power and adjusting it based on the duty cycle of the activity to determine the L_{eq} of the operation (FHWA 2006). Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some will have higher continuous noise levels than others, and some have high-impact noise levels.

Construction activity would result in temporary noise in the Project Site vicinity, exposing nearby receivers to increased noise levels. Using the three loudest pieces of construction equipment during each phase, construction noise would typically be higher during the more intensive phases of construction (i.e.,

equipment installation/construction) and would be lower during the less intensive construction phases (i.e., paving and staging). Per information provided by the Project sponsor, heavy construction equipment during construction could include a pile driver, backhoe, and manlift. The less intensive phases could include roller, excavator and backhoe construction equipment and would have lower construction noise levels. It is assumed diesel engines would power all construction equipment.

Table 8 summarizes construction noise associated with each phase of construction at the nearest residence, based on the equipment list provided by the applicant. As shown in Table 8, construction noise levels would be up to 91 dBA L_{eq} at the nearest residence during construction.

Table 8 Construction Noise Levels

Phase	RCNM Reference Noise Level (50 feet)	Nearest Single-Family Residence – 7790 Duncan Road (75 feet) [1]
Site Preparation	78	75
Construction	94	91
Paving	73	70
Staging	76	73

The closest sensitive receptor to the Project during construction would be a single-family residence approximately 75 feet from the nearest pile driver activity to the property line. Per information provided by the Project Sponsor, Project construction would occur between 7:00 a.m. and 7:00 p.m., excluding Sundays and federal holidays, which is within the County's exemption for noise associated with construction during the hours of 6:00 a.m. to 9:00 p.m. on any day in Section 9-404.020(c) in the County Code. Therefore, temporary construction noise impacts would be less than significant.

Operational Equipment

The Project would generate operational noise from use of inverters. To represent a typical inverter, this analysis uses a reference noise level from a typical 250 - 350 kW range commercial-scale inverter with a sound pressure level (SPL) of approximately 65 dBA at three feet.

Noise from an inverter is steady and broadband, generated primarily by cooling fans and electrical components, and occurs only during daylight hours when the solar array is producing power. Using standard attenuation of 6 dBA per doubling of distance, an inverter producing 65 dBA at three feet would attenuate to approximately 45 dBA at a distance of 30 feet. At distances greater than 30 feet, noise levels would continue to decrease below 45 dBA.

San Joaquin County's nighttime exterior noise standard for stationary noise sources at residential receptors is 45 dBA L_{eq} from 10 p.m. to 7 a.m. Although inverters typically operate only during daytime hours, this analysis applies the more restrictive nighttime standard to account for the possibility that the equipment could operate or emit residual noise outside of daytime hours.

The Project design would include inverters located 30 feet or further from a sensitive receptor property line. At this distance, operational noise from the inverter would attenuate to below 45 dBA L_{eq} and would comply with the County's daytime and nighttime exterior noise limits. Therefore, operational noise impacts would be less than significant.

Traffic Noise

Routine operations, including approximately two annual water truck trips for panel washing, would require up to two workers in a light to medium-duty utility truck to visit the facility up to 20 times per year. Noise from these vehicles would be typical of light- to medium-duty diesel trucks, generally producing short-term maximum levels of approximately 70 to 85 dBA at 50 feet during pass-by events. Given the infrequent

nature of these trips, they would not measurably increase ambient noise levels. Therefore, operational traffic noise and impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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

Construction and Decommissioning

Project construction and decommissioning could use equipment, such as a vibratory roller, bulldozers, or pile drivers that would temporarily result in groundborne vibration. Based on Caltrans' *Transportation and Construction Vibration Guidance Manual* recommendations limiting vibration levels to below 0.5 in/sec PPV inches per second at older residential structures would prevent structural damage regardless of building construction type (Caltrans 2020). The nearest sensitive receptor is located approximately 75 feet away from the nearest Project component where pile driving would occur; however, other construction activities could occur within 40 feet from the off-site residence. As shown in Table 9, the greatest anticipated source of vibration during general Project construction activities would be from an impact pile driver, which may be used within 75 feet of the nearest off-site residential structure. An impact pile driver creates a vibration level of approximately 1.518 in/sec PPV at a distance of 25 feet. At the distance of 75 feet, vibration levels would attenuate to 0.292 in/sec PPV. Additionally, a vibratory roller creates a vibration level of approximately 0.210 in/sec PPV at a distance of 25 feet. At the distance of 40 feet, vibration levels would attenuate to 0.104 in/sec PPV. At these distances, vibration levels from all anticipated construction equipment would be below the 0.5 in/sec PPV threshold for architectural damage to older residential structures.

Therefore, Project construction would not result in excessive ground-borne vibration or ground-borne noise, and impacts would be less than significant.

Table 9 Groundborne Vibration Levels

Equipment	Approximate Vibration Level (in/sec PPV)
Distance	**40 feet**
Vibratory Roller	0.104
Large Bulldozer	0.04
Loaded Truck	0.076
Small Bulldozer	0.001
Distance	**75 feet**
Impact Pile Driver	0.292

Source: Caltrans 2020

Operation

Operation of the proposed solar facility would not include any substantial vibration sources; therefore, operational vibration impacts would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

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

The Project Site is not located within an airport land use plan or within two miles of a public or private airport (San Joaquin 2018). The closest airport to the Project Site is the Stockton Metropolitan Airport, located approximately 12.7 miles southwest of the Project Site. Therefore, the Project would not expose

people residing or working in the Project area to excessive noise levels related to airstrip/airport operation. No impact would occur related to an existing airport or airport land use compatibility plan.

NO IMPACT

14 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the Project:				
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	■	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■

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

The Project is a proposed solar facility that does not include any housing or business development that would directly induce population growth. The Project would not create housing, employment centers, or other land uses that would attract new permanent residents or businesses. Construction activities would require a temporary workforce; however, these workers would be drawn from the existing regional labor pool and would not result in long-term population increases.

Operation of the Project would require two workers to visit the Project Site up to 20 times per year. It is anticipated that maintenance workers would live locally and would not relocate to the area. If workers were required to relocate to the area, the additional population would not represent a substantial population change.

The Project also would not indirectly induce population growth. It would not require or result in the extension of major infrastructure—such as roads, water supply systems, wastewater facilities, or other urban services—that could facilitate additional development or growth in the surrounding area. The Project would primarily consist of energy generation equipment and associated minor infrastructure necessary to interconnect with the existing electrical grid.

While the Project would contribute renewable energy to meet existing and forecasted electricity demand, including demand associated with anticipated regional growth, it would not itself drive or accelerate growth. Rather, it would support the reliability of the existing electrical system and help accommodate planned development consistent with adopted land use plans. Because the Project would not directly or indirectly induce substantial unplanned population growth, impacts would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

b. *Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

The Project would not displace any existing housing or people as the existing residence on site would not be affected by the Project. Therefore, no impact related to the need for replacement housing would occur.

NO IMPACT

15 Public Services

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
a. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
1 Fire protection?	☐	☐	☐	■
2 Police protection?	☐	☐	☐	■
3 Schools?	☐	☐	☐	■
4 Parks?	☐	☐	☐	■
5 Other public facilities?	☐	☐	☐	■

a.1. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.2. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

a.3. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

a.4. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

a.5. Would the Project result in substantial adverse physical impacts associated with the provision of other new or physically altered public facilities, or the need for other new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The Project is an unmanned solar facility that does not include the need for new or physically altered governmental facilities. The Project does not include the construction of residential structures, nor would it induce population growth on the Project Site or in the surrounding area. As discussed under criterion 14(a), operation of the Project would not require daily on-site employees and construction and decommissioning phases would be short term in nature. Construction workers are anticipated to be drawn from the existing regional labor pool and would not result in long-term population increases. As such, the Project would not increase the need for new or physically altered governmental services, including fire protection services, police protection services, schools, parks, and other facilities, to

maintain acceptable service ratios, response times or other performance objectives. No impacts related to public services would occur.

NO IMPACT

16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
a. Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	■
b. Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	■

a. *Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

As described in Section 14, *Population and Housing*, the Project does not include development of housing or businesses that would directly or indirectly result in population growth. Therefore, the Project would not increase the population served by local recreation facilities or otherwise result in increased demand for or degradation of those facilities. No impact to existing neighborhood and regional parks or other recreational facilities would occur.

NO IMPACT

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?*

As described in Section 14, *Population and Housing*, the Project does not include development of housing or businesses that would directly or indirectly result in population growth. Therefore, the Project would not 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. In addition, the Project would not include or require the construction or expansion of recreational facilities, the construction of which could have an adverse physical effect on the environment. Therefore, no impact related to the construction or expansion of recreational facilities would occur.

NO IMPACT

17 Transportation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the Project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	■	☐
b. 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 use (e.g., farm equipment)?	☐	☐	☐	■
d. Result in inadequate emergency access?	☐	☐	☐	■

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

Regional and local plans addressing the circulation system include the San Joaquin Council of Governments (SJCOG) 2022 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), and San Joaquin Regional Transit District's (SJRTD) San Joaquin Coordinated Public Transportation Plan (SJCOG 2022, SJRTD 2025). Access to the Project Site during construction, operation, and decommissioning would be provided by a new driveway access from East Comstock Road. There are no transit stops located adjacent to the Project Site; the nearest transit stops are located approximately 9 miles west of the Project Site at the edge of the Stockton metropolitan area. There are no existing bicycle facilities on Duncan Road or East Comstock Road, and none are proposed for future installation on the portions of these roads nearest to the Project Site. These portions of Duncan Road and East Comstock Road do not contain sidewalks adjacent to the Project Site; the nearest sidewalk on Duncan Road is located approximately 1.4-miles south of the Project Site in the residential community of Linden.

On average approximately 15 construction workers would be on the Project Site during construction, with up to 104 daily construction vehicle trips during installation which would be the most trip-intensive construction phase. During construction, construction equipment and construction worker vehicles would be staged on the Project Site and would not require the partial or full closure of Duncan Road or East Comstock Road. Construction traffic would be temporary and limited to the duration of the approximately 6-month construction schedule. After construction is complete, operation of the Project would not generate substantial amounts of traffic, because the Project would be operated remotely. Routine operations would require up to 20 operations and maintenance visits per year. The minimal level of additional trips generated would not have the potential to conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. Therefore, impacts related to a program, plan, ordinance or policy addressing the circulation system would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

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

CEQA Guidelines Section 15064.3(b) identifies criteria for evaluating transportation impacts. Specifically, the guidelines state VMT exceeding an applicable threshold of significance may indicate a significant

impact. In 2018, the Governor's Office of Land Use and Climate Innovation (LCI) published the *Technical Advisory on Evaluating Transportation Impacts in CEQA* which provides on evaluating the potential significance of a Project's VMT impacts. As stated in the Technical Advisory, Projects that generate or attract fewer than 110 passenger vehicle trips per day generally are assumed to have a less-than-significant impact related to VMT (OPR 2018).

Overall, the Project is expected to generate an average of 15 worker trips and a peak of 104 construction vehicle trips per day during installation, which would be the most trip-intensive construction phase. The estimated number of construction-phase trips is based on the planned work activities, construction schedule, and Project Sponsor experience on similar Projects. After construction is complete, the Project would function as an unmanned facility that is controlled remotely from an off-site location. No daily operational trips would typically be generated by the Project. Routine operations and maintenance would require up to two workers in a medium-duty utility truck to visit the Project facility up to 20 times per year during the operational lifespan of the Project. Operational trips include two anticipated panel washings per year, each involving two light to medium duty trucks, four employees, and a water buffalo. Accordingly, vehicle trips would not exceed the OPR threshold of 110 passenger vehicle trips per day, and, therefore, the Project would result in a less-than-significant VMT impact without conducting a detailed traffic study based on OPR's recommendations for small Projects. Therefore, the Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and this impact would be less than significant.

LESS-THAN-SIGNIFICANT IMPACT

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

d. *Would the Project result in inadequate emergency access?*

The Project would be accessed via a driveway on either E. Comstock Road or N. Duncan Road. The proposed driveway would comply with existing county requirements which would ensure that this would not introduce sharp curves, dangerous intersections, or other roadway design features that could increase traffic hazards. Construction and decommissioning activities would involve temporary delivery trucks and equipment; however, these vehicles would use established routes and comply with applicable traffic safety requirements, and their presence would not create long-term hazards or conflicts with existing uses, including agricultural operations. Operation of the facility would generate minimal traffic, limited to periodic maintenance visits, and would not interfere with surrounding land uses. In addition, the Project would be designed to comply with San Joaquin County Code Standards related to emergency access, including Municipal Code Chapter 4-1006, which sets standards for emergency access for fire apparatuses and emergency vehicles based on the San Joaquin County Fire Chiefs Association, Fire Apparatus Access Road Standard. The Project would not block or restrict existing roadways or access points, and emergency responders would be able to enter and exit the site without obstruction. Therefore, the Project would not increase transportation hazards or impede emergency access.

NO IMPACT

The Governor's Office of Land Use and Climate Innovation was formerly known as the Governor's Office of Planning and Research (OPR) at the time the *Technical Advisory on Evaluating Transportation Impacts in CEQA* was published.

18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. 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)?	☐	☐	■	☐
b. 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.	☐	☐	■	☐

On July 1, 2015, California AB 52 went into effect, expanding CEQA by defining a new resource category of "tribal cultural resources." AB 52 establishes that "a Project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a Project that may have a significant effect on the environment" (PRC Section 21084.2). It further states the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3). PRC Section 21074 (a)(1) (A-B) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is:

1. Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k), or
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c). In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American Tribe.

AB 52 establishes a formal consultation process for California Tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the Project," specifically with those Native American Tribes that have requested notice of Projects proposed within the jurisdiction of the lead agency. Consultation begins with a written notification that must include a brief description of the Project, the Project's location, the lead CEQA agency contact information, and notification that the California Native American Tribe has 30 days to request consultation. Upon receipt of a written response from a California Native American Tribe requesting consultation, the lead CEQA agency and the California Native American Tribe requesting consultation shall begin the AB 52 process.

a. *Would the Project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?*

b. *Would the Project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?*

On October 23, 2025, the San Joaquin County Community Development Department initiated early consultation and agency referral for the proposed Conditional Use Permit (PA-2500218 [C]) for a 14.5-acre ground-mounted photovoltaic energy facility at 18133 East Comstock Road, Linden, San Joaquin County. As part of this referral, the County transmitted project information and an opportunity to comment to multiple California Native American tribes and tribal-related entities traditionally and culturally affiliated with the project area, consistent with Public Resources Code Section 21080.3.1.

The AB 52 notice and application referral were sent to the California Native American Heritage Commission, California Tribal TANF Partnership, California Valley Miwok Tribe, North Valley Yokuts Tribe, United Auburn Indian Community, and Buena Vista Rancheria. The referral described the project, its location at the northeast corner of East Comstock Road and North Duncan Road (APN 091-170-06), and provided contact information for the project planner, along with a response deadline of November 20, 2025. The notice advised that recommendations and/or comments received after that date may not be considered in the analysis.

As of the preparation of this Initial Study - Mitigated Negative Declaration, no tribe has requested formal AB 52 consultation for the project, and no tribal cultural resources, as defined in Public Resources Code Section 21074, have been identified through the referral process or other outreach efforts. Based on the absence of requested consultation and the lack of identified tribal cultural resources within the project site, the project would not cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources or a local register, nor in a resource determined by the lead agency to be significant pursuant to Public Resources Code Section 5024.1(c).Therefore, impacts to tribal cultural resources would be less than significant.

If human burials found to be of Native American origin are encountered during project construction, all work shall halt in the vicinity of the discovery and the San Joaquin County Coroner shall be notified immediately. At the same time, a qualified archaeologist shall be contacted to evaluate the find. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission and the Most Likely Descendant shall be identified, and treatment of the remains shall follow the requirements of Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98, as well as the procedures set forth in State CEQA Guidelines Section 15064.5. Implementation of these procedures would ensure that any unanticipated discovery of Native American human remains is handled in a respectful and legally compliant manner and would avoid or substantially lessen potential impacts to tribal cultural resources.

LESS-THAN-SIGNIFICANT IMPACT

19 Utilities and Service Systems

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

a. *Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

The Project is a 15.2-acre solar facility that would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. The PG&E point of interconnection associated with the Project would not necessitate the use of substantial construction equipment or include ground disturbance or intensive construction activities. Therefore, impacts related to public utility infrastructure interconnections associated with the Project would not have a substantial environmental effect. The Project is a solar generation facility that would provide new electricity to the existing energy grid through a proposed connection to an existing transmission line, the construction of which is evaluated throughout this document along with total Project construction impacts. No additional impacts related to electric power facilities would occur.

LESS-THAN-SIGNIFICANT IMPACT

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

As discussed under *Description of Project*, the Project would not require permanent on-site personnel and does not include the installation of potable water service connections or groundwater wells. Water required for construction and decommissioning for dust suppression would be delivered to the site by

truck by a local purveyor. Groundwater from the San Joaquin Valley Basin supplies approximately 30 percent of water in the region (USGS 2024).

As discussed in Section 10, *Hydrology and Water Quality,* the Project Site overlies the Eastern San Joaquin Subbasin, which is part of the San Joaquin Valley Groundwater Basin (California SWRCB 2006). The Eastern San Joaquin Subbasin is not adjudicated, although it is in condition of critical overdraft (DWR 2026). Groundwater level measurements within the Eastern San Joaquin Subbasin have been in continuous decline over the last 40 years (San Joaquin County 2014).

The amount of water required during construction and decommissioning of the Project would be temporary and nominal. Once operational, the Project would require up to 65,000 gallons of water per year. Operational water would be obtained from an external commercially available source and would not affect groundwater supplies directly within the Project area. The minimal quantities of water required during construction, operation, and decommissioning would not substantially impact regional water supplies. Therefore, the Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years, and impacts would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

c. *Would the Project result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments?*

The Project is an unmanned solar facility that does not include wastewater treatment connections. Therefore, no impact related to wastewater treatment capacity would occur.

NO IMPACT

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

e. *Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

The Project Site is currently undeveloped and would not require any demolition during construction. Construction and eventual decommissioning of the solar facility would generate typical construction-related waste (e.g., packaging materials, scrap metal, and minor debris), which would be temporary and disposed of at permitted facilities. Waste would be segregated, where practical, for recycling. Non-recyclable wastes would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill. The nearest Class III landfill to the Project Site is the Foothill Sanitary Landfill, located approximately 8.5 miles east of the Project Site. The Foothill Sanitary Landfill has a remaining capacity of 125 million cubic yards and operations are projected to continue through 2082 (CalRecycle 2010). Construction of the Project would result in a minimal quantity of waste, which could be accommodated by the remaining capacities of the Foothill Sanitary Landfill. Furthermore, the construction contractor would adhere to State regulations pertaining to construction waste and recycling requirements, such as the California Green Building Standards Code, which requires diversion of at least 65 percent of construction debris.

Operation of the Project would generate minimal solid waste, limited to small amounts of maintenance-related materials, and would not place a measurable demand on local landfill capacity.

While decommissioning would involve the removal of all above ground components and the removal of piers up to three feet below grade, solar panels and accessory infrastructure would be recycled to the extent feasible. Therefore, the Project would not generate solid waste in excess of State or local standards, local infrastructure capacity, or otherwise impair the attainment of solid waste regulation

goals and would comply with applicable statutes and regulations related to solid waste. These impacts related to adherence to existing regulatory requirements would be less-than-significant.

LESS-THAN-SIGNIFICANT IMPACT

20 Wildfire

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

a. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project substantially impair an adopted emergency response plan or emergency evacuation plan?*

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

d. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*

The Project Site is not within a State Responsibility Area or lands classified as a Very High Fire Hazard Severity Zone, as delineated by CAL FIRE's Fire Hazard Severity Zone Viewer (CAL FIRE 2024). The nearest fire hazard zone is a moderate fire hazard zone located in a local responsibility area approximately 3 miles east of the Project Site. Vacant lands and existing agricultural development, roads, and two aqueduct crossings separate the moderate fire hazard zone from the Project Site. The Project Site is not near lands classified as a Very High Fire Hazard Severity Zone within a State Responsibility Area and would therefore not substantially impair an adopted emergency response plan or emergency evacuation plan, exacerbate wildfire risks, or expose people or structures to significant risks such as

21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than - Significant Impact	No Impact
Does the Project:				
a. 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. Have impacts that are individually limited, but cumulatively considerable? ("Cumulativeiy considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects)?	☐	■	☐	☐
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	■	☐

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

As discussed in Section 4, *Biological Resources*, the Project would not significantly impact the total mapped habitat area of a species or result in the loss of a locally or regionally important population of any of these species. Therefore, the Project would not 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, or substantially reduce the number or restrict the range of a rare or endangered plant or animal.

As discussed in Section 5, Cultural Resources, the Project would not substantially alter the built environment resources on-site and would not result in an adverse change in the significance of an archaeological resource with implementation of Mitigation Measures CUL-1 through CUL-3. Therefore, the Project would not eliminate important examples of the major periods of California history or prehistory and, as such, impacts would be less-than-significant after mitigation.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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

As described throughout the Initial Study - Mitigated Negative Declaration with respect to all environmental issues, the Project would not result in significant and unmitigable impacts to the environment. All anticipated impacts associated with Project construction, operation, and decommissioning would be either less-than-significant or less than significant with mitigation incorporated. The Project would have no impact on aesthetics (scenic vistas, scenic resources within a State Scenic Highway, new sources of substantial light or glare), forestry resources (conflict with existing zoning or result in the loss of forest land or timberland), biological resources (riparian habitats, protected wetlands, migratory species, and conflict with local policies and ordinances or and adopted habitat plan), cultural resources (significance of historical resources), energy (conflict with a state or local plan for energy efficiency or renewable energy), geology and soils (rupture of a known earthquake fault and septic tanks or alternative wastewater disposal systems), hazards and hazardous materials (hazards within 0.25 mile of a school, location on a hazardous materials site, hazards within two miles of an airport, and exposure to wildland fire risks), hydrology and water quality (release of pollutants due to inundation), land use and planning, mineral resources, noise (exposure within two miles of an airport), population and housing (displacement of people or housing), public services, recreation, transportation (conflict with *CEQA Guidelines* 15064.3, subdivision (b), hazards due to geometric design or incompatible uses, and inadequate emergency access), utilities and service systems (relocation or expansion utility infrastructure or wastewater treatment capacity), or wildfire. Thus, the Project would not contribute to cumulative impacts for these resource topics and these topics are not discussed further.

Section 15355 of the *CEQA Guidelines* defines a cumulative impact as the condition under which "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the Project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (CCR Section 15355). A list of projects within a 5-mile radius of the Project Site are included in Table 10, below.

Table 10 Planned and Pending Projects within 5 Miles of Proposed Project

Project Name/Description	Agency	Project Description[1]	Distance from Project Site (in miles)	Status
State Route (SR) 26 and Jack Tone Road Roundabout	San Joaquin County	Install roundabout at intersection of SR 26 and Jack Tone Road.	4.24	Unknown
SR-88 Pavement Anchor Project (EA 1M590)	Caltrans	Pavement rehabilitation, Bridge rail upgrading, ADA improvements, Guardrail upgrading, Sign panel replacement in San Joaquin County, East of Stockton from 0.3 km E of Comstock Rd to W JCT RTE 12 (PM 5.1 / 16.4)	4.99	Unknown
Installation of Pedestrian Crosswalks and Flashing Beacons at Various Locations (EA 1Q520)	Caltrans	Install new and replace existing pedestrian crosswalks and new rectangular rapid flashing beacons in San Joaquin, Merced, and Stanislaus Counties, on Routes 26, 140 and 120 at various locations.	1.80 to 5.00	Unknown

Project Name/Description	Agency	Project Description[1]	Distance from Project Site (in miles)	Status
SR-26 Duncan Road Safety Project (EA 1S810)	Caltrans	In San Joaquin. Replace Light Emitting Diode (LED) lamp bulbs, LED blinker beacon, beacon pole, and red/yellow signpost reflector On SR-26 PM 10.0.	1.90	Unknown
Escalon-Bellota Road Over Mormon Slough Bridge Replacement	San Joaquin County	Escalon-Bellota Road Over Mormon Slough, just S/E of SR 26. Replace 2-Lane Bridge with Standard 2-Lane Bridge.	4.29	Unknown
Jack Tone Road Resurfacing	San Joaquin County	Roadway resurfacing of Jack Tone Road (SR 26 to Eight Mile Road).	4.22	Unknown
Williamson Act Contract Cancelation and Lot Line Adjustment	San Joaquin County	18860 E Comstock Rd, Linden	0.42	Approved
Minor Subdivision No. PA-2500178	San Joaquin County	20999 E State Route 26, Linden	2.14	Approved with Conditions

[1] Cumulative project details were sources from: San Joaquin Council of Governments 2026, San Joaquin County 2026

Project impacts are primarily temporary or localized effects that would occur from Project construction. The potential for the Project to contribute to cumulative impacts would be limited to the limited to the following issues:

Aesthetics

The geographic area used to assess cumulative impacts to aesthetics includes the viewshed of the agricultural environment experienced from public views on surface streets (North Duncan Road and East Comstock Road) proximate to the Project Site. There are no pending or approved development projects in the same viewshed as the Project Site; therefore, a cumulative aesthetics impact would not occur.

Agriculture

The geographic area used to assess cumulative impacts to agriculture and forestry resources is San Joaquin County. A significant cumulative impact would occur if cumulative projects would convert substantial quantities of existing Farmland such that the agricultural nature of the County is altered. As a result of a historical pattern of Farmland conversion in the region, caused primarily by development pressure and water scarcity, a significant adverse cumulative impact related to farmland conversion does exist in San Joaquin County. However, currently planned cumulative development, as listed in Table 10, does not include other land use conversion projects within agricultural zones in the County. The proposed footprint of the planned minor subdivision project, at 20999 SR 26, is presently developed with existing structures and limited commercial use. All future development in the County would be subject to the provisions of the San Joaquin County Code, including applicable zoning code. Additionally, future development would be subject to the restrictions of any active Williamson Act contracts in place. Adherence to these applicable regulations, as they apply to the conversion of existing farmland, would be evaluated in the permitting and entitlement process to be facilitated by the County prior to development. With appropriate regulatory compliance, cumulative impacts related to agriculture and forestry resources would be less than significant. As such, the Project's cumulative impacts related to agriculture and forestry resources would be less than significant.

Air Quality

The geographic area used to assess cumulative impacts to air quality is the SJVAB. The evaluation of the Project's potential to result in impacts to air quality is, in itself, a cumulative analysis, as the *CEQA Guidelines* Appendix G thresholds asks if the Project would result in a cumulatively considerable net increase of a criteria pollutant for which the Project region is in non-attainment. The SJVAB is a nonattainment area for ozone, PM_{10}, and $PM_{2.5}$ under the NAAQS and/or CAAQS. Therefore, cumulative air quality impacts currently exist for these pollutants. As discussed in Section 3, *Air Quality*, Project construction, operation, and decommissioning would not generate emissions of these criteria air pollutants exceeding SJVAPCD's significance thresholds, which are intended to assess whether a Project's contribution to existing cumulative air quality impacts is considerable. Therefore, the Project's contribution to cumulative air quality impacts would not be cumulatively considerable. As such, the Project's cumulative impacts related to air quality would be less than significant.

Biological Resources

The geographic area used to assess cumulative impacts to biological resources is the nonnative annual grasslands within the SJMSCP's Central/Southwest Transition Zone within San Joaquin County. Cumulative impacts consider impacts that would occur from the reasonably foreseeable future development, including those projects listed in Table 9 and cumulative development assumed in the SJMSCP. Most cumulative impacts to biological resources occur when a disproportionate number of development projects occur at once and regionally impact a local population of a special-status wildlife species. Impacts to special-status species like habitat loss can aggregate across a region as a result of a disproportionate number of development projects in one area and can therefore cause cumulative impacts. All cumulative development would comply with all applicable laws and regulations governing biological resources. However, regulatory compliance does not guarantee a reduction of potential impacts to biological resources, particularly the special-status species that are present in the environment of the cumulative setting. Cumulative development would have the potential to disturb special-status species and their habitats or conflict with the SJMSCP, which would contribute to the decline of species population, including the potential to result in a decline of a listed species. Accordingly, cumulative impacts to biological resources would be potentially significant.

The Project would adhere to all applicable regulatory requirements to minimize potential impacts to special-status species. Specifically, with implementation of Mitigation Measures BIO-1 and BIO-2, the Project would not contribute to cumulative impacts to biological resources such as the aggregation of habitat loss, due to the fact that the specific biological resources the Project could affect are common and abundant beyond the Project Site, and because the Project footprint is small. Furthermore, the Project Sponsor would be required to implement Mitigation Measures BIO-1 and BIO-2 which would require preconstruction surveys and implementation of avoidance measures, to reduce Project-level impacts to less-than-significant. Implementation of these measures would be required to reduce the Project's contribution such that it would not be cumulatively considerable.

Cultural Resources

The geographic area used to assess cumulative impacts to cultural resources is San Joaquin County. Cumulative development includes past, present, and reasonably foreseeable planned and future development, including the projects in Table 9, that could potentially disturb sensitive areas for cultural resources. Future development near the Project Site could potentially be located in a sensitive area for cultural resources. In addition, unknown resources may be uncovered at other cumulative development sites. Existing County regulations within Chapter 9-1053 of the Municipal Code and the San Joaquin County General Plan Natural and Cultural Resources Element would protect any unknown resources that might be uncovered during Project development. General Plan Policy NCR-6.5 requires an archeological report be prepared prior to permits and approvals. In the event that future cumulative development would result in impacts to known or unknown cultural resources, impacts to such resources would be

addressed on a case-by-case basis. For the purposes of this analysis, impacts to cultural resources are assumed to be potentially significant.

As discussed under Section 5, *Cultural Resources*, there are known know historical or archaeological resources on the Project Site. In addition, the Project Sponsor would be required to implement Mitigation Measures CUL-1 through CUL-3, which would require site personnel to participate in a Workers Environmental Awareness Program, led by a qualified archaeologist; implementing archaeological monitoring during ground-disturbing activities; and implementing standard procedures in the event archaeological resources are unexpectedly encountered during ground-disturbing activities to reduce Project-level impacts to less-than-significant. With implementation of these measures, the Project's contribution would not be cumulatively considerable.

Energy

The geographic area used to assess cumulative impacts to energy considers the cumulative effects of energy use in San Joaquin County. Foreseeable cumulative development would be subject to State requirements for energy efficiency, such as the California Building Energy Efficiency Standards and the California Green Building Standards Code which would ensure projects are designed and constructed to be energy efficient. Construction of cumulative development would be carried out in accordance with CCR Title 13 Sections 2449 and 2485 which would ensure construction would not use energy in a wasteful, inefficient, or unnecessary manner. Because cumulative development would be required to comply with existing state regulations for energy-efficiency, cumulative impacts to energy would be less than significant. Further, as a utility scale solar generation facility, the Project would inherently result in a net negative draw on regional energy use.

Geology and Soils

Geologic hazards are dependent on site-specific conditions, such that development at one project site would not increase another project's geologic hazards impacts. Therefore, this discussion pertains to cumulative impacts to paleontological resources. The geographic area used to assess cumulative impacts to paleontological resources is development within the San Joaquin Valley. Cumulative development within the San Joaquin Valley would continue to disturb areas with the potential to contain paleontological resources. Cumulative development projects have undergone or would be required to undergo CEQA review, which would determine the extent of potential paleontological resources impacts and mitigate those impacts appropriately. This analysis conservatively assumes a cumulative impacts to paleontological resources would be potentially significant. The Project would be required to implement Mitigation Measure GEO-1 which would require WEAP training, paleontological monitoring, and fossil salvage, preparation and curation, and preparation of a final paleontological mitigation report, if necessary to reduce Project-level impacts to less-than-significant. Implementation of Mitigation Measure GEO-1 would reduce the Project's potential contribution such that it would not be cumulatively considerable.

Greenhouse Gas Emissions

GHG emissions and climate change are, by definition, cumulative impacts. The adverse environmental impacts of cumulative GHG emissions, including sea level rise, increased average temperatures, more drought years, and more large forest fires, are already occurring. As a result, cumulative impacts related to GHG emissions are significant. Thus, the issue of climate change involves an analysis of whether a Project's contribution towards an impact is cumulatively considerable. As discussed in Section 8, *Greenhouse Gas Emissions*, the Project would be consistent with plans to minimize GHG emissions, including the 2022 Scoping Plan, Renewables Portfolio Standard, SB 100, and the SJVAPCD Climate Change Action Plan. Additionally, operation of the Project would ultimately result in an expansion of renewable energy technology which would promote the reduction of fossil fuel use and associated GHG emissions. Therefore, the Project's impact would not be cumulatively considerable.

Hazards and Hazardous Materials

The geographic area used to assess cumulative impacts to hazards and hazardous materials includes the area within five miles of the Project Site, as hazardous materials releases from cumulative development could result exposure of people to hazardous materials proximate to the Project Site. The Project Site is located within a primarily agricultural and rural portion of San Joaquin County. Existing hazardous materials use in the cumulative study area is limited and typically associated with agricultural operations (e.g., fuels, fertilizers, pesticides), transportation corridors, and small-scale industrial or utility uses. These activities are regulated under federal, state, and local hazardous materials management programs, including the California Accidental Release Prevention (CalARP) Program and Unified Program oversight by the Certified Unified Program Agency (CUPA). Project-related hazardous materials would be limited to small quantities and stored, handled, and disposed of in compliance with applicable regulations and best management practices. No acutely hazardous materials in quantities that would trigger offsite consequence planning are proposed. Any releases from cumulative development, including the projects listed in Table 9 would be site-specific, regulated, and localized in extent such that a cumulative impact would not occur.

Hydrology and Water Quality

The geographic area used to assess cumulative impacts to surface water is the San Joaquin River watershed. The geographic area used to assess cumulative impacts to groundwater is land overlying the Eastern San Joaquin Subbasin. A cumulative impact could occur if foreseeable planned and future development within the geographic area, including those projects listed in Table 10, would discharge pollutants to the same watershed and violate water quality standards, or if these projects underly the same groundwater basin and would result in substantially decreased groundwater supplies. Due to the existing overdraft conditions present throughout the San Joaquin Basin region, a cumulative impact related to groundwater management exists.

Ground disturbance by the Project and cumulative projects could cause the release of sediment and other pollutants into surface water or groundwater. As noted in Table 9, the cumulative scenario includes multiple projects, such as the proposed subdivision, that, like the Project, involve ground disturbance over relatively flat terrain. Because the topography of the Project Site along with the sites of other projects in the cumulative scenario do not contain steep slopes, the potential for erosive conditions is low. Projects that could generate stormwater runoff during soil-disturbing construction activities and discharge to surface waters would be required to comply with federal, State, and County water quality requirements, such as the Construction Stormwater General Permit and Chapter 9-1125 of the County's Municipal Code and conditions of the County grading permits. These regulations would require implementation of a SWPPP and its associated BMPs to maintain and treat stormwater and prohibit waste discharge in or adjacent to water bodies, which would reduce the incremental contributions of projects. Therefore, cumulative impacts related to surface water quality and management would be less-than-significant.

Cumulative development could result in increased water demand from the Eastern San Joaquin Subbasin. However, all water use would occur in compliance with the Eastern San Joaquin Subbasin Sustainable Groundwater Management Act. A majority of the planned projects identified in Table 10, by nature, would not generate substantially increased operational water demands relative to present conditions, including the various planned transportation improvement projects to occur in the vicinity of the Project. The Project would not require substantial regular water use during operation and maintenance activities. During operation, biannual solar panel washings and any landscaping maintenance is anticipated to generate an annual water demand of approximately 65,000 gallons. It is anticipated that any landscaping (if required as a screening buffer) would be comprised of native plants, requiring minimal water once established. As a result, the Project's contribution to existing significant cumulative groundwater management impacts related to sustainable groundwater management would be less-than-significant.

Noise

Construction noise and vibration are localized and rapidly attenuate. Cumulative construction noise and vibration impacts would therefore occur if other projects are located proximate to the Project such that overlapping construction schedules could result in increased construction noise and vibration at the same sensitive receptors. However, no projects are currently planned to be developed in the immediate vicinity of the Project Site during active construction of the Project. For example, the nearest planned and approved project to the Project Site is the Williamson Act Contract Cancelation and Lot Line Adjustment, which would be a paper transfer and would not include excessive noise generation. Additionally, similar to the Project, cumulative development projects would be subject to compliance with the noise level limits established in the San Joaquin County Municipal Code. Therefore, operational noise from the Project would not combine to create a substantial cumulative increase in noise levels. Therefore, cumulative noise impacts would be less-than-significant.

Population and Housing

Foreseeable cumulative development within the county could include transportation, residential, commercial, and industrial projects in Table 9 which could result in direct impacts to population growth (due to the proposal of new homes and businesses) and indirect impacts to population growth (due to the expansion of transportation services and related infrastructure). The development of cumulative projects could potentially result in substantial population growth within the County. However, cumulative projects would be developed in accordance with the population and housing projections of the San Joaquin County General Plan goals and policies and the San Joaquin Council of Governments Regional Housing Needs Plan and would result in a less-than-significant cumulative impact.

Transportation

The geographic area used to assess cumulative transportation impacts is San Joaquin County. A cumulative transportation impact could occur if cumulative County development would result in exceedance of long-term countywide VMT targets. Cumulative development in San Joaquin County could include residential, commercial, and industrial projects, including those in Table 9, which could increase population, employment, and subsequently citywide VMT. Therefore, cumulative impacts are potentially significant. The Project would be remotely monitored during operations and is expected to generate trips up to approximately 20 trips per year during operations and maintenance activities. This amount would not exceed FTA or County thresholds for VMT screening. Therefore, the Project's contribution to VMT would not be cumulatively considerable.

Tribal Cultural Resources

The geographic area for considering cumulative impacts to tribal cultural resources is based on the ethnographic use patterns of the Project Site and surrounding region. Cumulative development in the County, including projects listed in Table 9, could cumulatively contribute to the erasure of tribal cultural resources important to these Tribes from the landscape. However, compliance with the provisions of AB 52 would ensure that any known or potential tribal cultural resources are treated in consultation with local Native American groups. Compliance with AB 52, implementation of Project-specific measures to protect tribal cultural resources on a case-by-case basis, and continued involvement by local Native American groups in regional planning would limit the destruction of tribal cultural resources such that cumulative impacts would be less-than-significant.

Utilities and Service Systems

The Project would have no impact on wastewater, electric, or natural gas, infrastructure; therefore, these utilities are not discussed in the above analysis. The geographic area used to assess cumulative utilities and service systems impacts is the Eastern San Joaquin Subbasin service area for water and San Joaquin County for solid waste disposal. A cumulative utilities and service systems impact could occur if

cumulative development would increase water demand in the Eastern San Joaquin Subbasin service area such that the Eastern San Joaquin Subbasin cannot adequately meet cumulative demands or generate solid waste that exceeds the current capacity of the Foothill Sanitary Landfill. Groundwater from the San Joaquin Valley Basin supplies approximately 30 percent of water in the region (USGS 2024). The Eastern San Joaquin Subbasin is not adjudicated, although it is in condition of critical overdraft (DWR 2026). Groundwater level measurements within the Eastern San Joaquin Subbasin have been in continuous decline over the last 40 years (San Joaquin County 2014). Therefore, cumulative impacts to groundwater would be potentially significant. The amount of water required during construction and decommissioning of the Project would be temporary and nominal. Water to be used during operation would be obtained from an external commercially available source, and would not directly affect groundwater supplies within the Project area. . Therefore, cumulative development would be adequately served by the existing water supply, and cumulative water supply impacts would be less-than-significant.

The Foothill Sanitary Landfill has a remaining capacity of 125 million cubic yards and operations are projected to continue through 2082 (CalRecycle 2010). Accordingly, sufficient landfill capacity exists to serve cumulative development. Therefore, cumulative impacts to solid waste would be less-than-significant.

Based on the above, the Project does not have impacts that are individually limited, but cumulatively considerable. As such, the Project's cumulative impacts related to utilities and service systems would be less than significant.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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

Adverse effects on human beings are typically associated with air quality, hazards and hazardous materials, and noise impacts. As detailed in Section 3, *Air Quality*, Section 9, *Hazards and Hazardous Materials*, and Section 13, *Noise*, the Project would not result, either directly or indirectly, in substantial adverse effects related to air quality, hazardous materials, and noise with implementation of Mitigation Measure AQ-1. Therefore, impacts to human beings would be less than significant with mitigation incorporated.

LESS-THAN-SIGNIFICANT IMPACT

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Duncan Road Project Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Duncan Road Project
Construction Start Date	10/1/2026
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40000
Precipitation (days)	37.4000
Location	Comstock Rd & Duncan Rd, California 95236, USA
County	San Joaquin
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2120
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.43

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
General Light Industry	1.000000	1000sqft	14.5000	1,000.000	0.00000	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.31028	1.09283	9.91213	16.2188	0.04025	0.24031	0.82762	1.06794	0.22302	0.21318	0.43619	—	5,070.05	5,070.05	0.16231	0.29047	4.82796	5,165.50
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.31258	1.09342	10.4415	15.9582	0.04026	0.25724	0.82762	1.08486	0.23858	0.21318	0.45176	—	5,076.18	5,076.18	0.16529	0.29146	0.14201	5,167.31
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.32859	0.27595	2.47527	3.88829	0.00992	0.06142	0.19029	0.25171	0.05695	0.04897	0.10592	—	1,236.02	1,236.02	0.04055	0.06800	0.48534	1,257.79
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.05997	0.05036	0.45174	0.70961	0.00181	0.01121	0.03473	0.04594	0.01039	0.00894	0.01933	—	204.638	204.638	0.00671	0.01126	0.08035	208.241

2.2. Construction Emissions by Year

2.2.1. Total Construction Emissions by Year, Unmitigated

Includes both onsite and offsite emissions.

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.31028	1.09283	9.91213	16.2188	0.04025	0.24031	0.82762	1.06794	0.22302	0.21318	0.43619	—	5,070.05	5,070.05	0.16231	0.29047	4.82796	5,165.50
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.31258	1.09342	10.4415	15.9582	0.04026	0.25724	0.82762	1.08486	0.23858	0.21318	0.45176	—	5,076.18	5,076.18	0.16529	0.29146	0.14201	5,167.31
2027	1.28446	1.07890	10.0717	15.8241	0.04025	0.24031	0.82762	1.06794	0.22302	0.21318	0.43619	—	5,033.94	5,033.94	0.16522	0.29144	0.12496	5,125.05
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.18894	0.15769	1.41476	2.10012	0.00560	0.03717	0.09650	0.13367	0.03444	0.02489	0.05934	—	693.883	693.883	0.02299	0.03620	0.28267	705.529
2027	0.32859	0.27595	2.47527	3.88829	0.00992	0.06142	0.19029	0.25171	0.05695	0.04897	0.10592	—	1,236.02	1,236.02	0.04055	0.06800	0.48534	1,257.79
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.03448	0.02878	0.25819	0.38327	0.00102	0.00678	0.01761	0.02439	0.00629	0.00454	0.01083	—	114.880	114.880	0.00381	0.00599	0.04680	116.808
2027	0.05997	0.05036	0.45174	0.70961	0.00181	0.01121	0.03473	0.04594	0.01039	0.00894	0.01933	—	204.638	204.638	0.00671	0.01126	0.08035	208.241

2.2.2. Onsite Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	1.04428	0.87726	7.88620	13.5987	0.02821	0.21624	0.00000	0.21624	0.19894	0.00000	0.19894	—	3,044.68	3,044.68	0.12351	0.02470	0.00000	3,055.13
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.05117	0.88304	8.15167	13.5776	0.02823	0.23316	0.00000	0.23316	0.21451	0.00000	0.21451	—	3,046.50	3,046.50	0.12358	0.02472	0.00000	3,056.96
2027	1.04428	0.87726	7.88620	13.5987	0.02821	0.21624	0.00000	0.21624	0.19894	0.00000	0.19894	—	3,044.68	3,044.68	0.12351	0.02470	0.00000	3,055.13
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.15833	0.13302	1.14473	1.81968	0.00415	0.03411	0.00000	0.03411	0.03138	0.00000	0.03138	—	447.955	447.955	0.01817	0.00363	0.00000	449.493

2027	0.27138	0.22798	1.98272	3.35207	0.00715	0.05586	0.00000	0.05586	0.05139	0.00000	0.05139	—	771.424	771.424	0.03129	0.00626	0.00000	774.071
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.02889	0.02428	0.20891	0.33209	0.00076	0.00622	0.00000	0.00622	0.00573	0.00000	0.00573	—	74.1641	74.1641	0.00301	0.00060	0.00000	74.4187
2027	0.04953	0.04161	0.36185	0.61175	0.00130	0.01019	0.00000	0.01019	0.00938	0.00000	0.00938	—	127.718	127.718	0.00518	0.00104	0.00000	128.156

2.2.3. Offsite Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.26600	0.21558	2.02594	2.62013	0.01204	0.02407	0.82762	0.85170	0.02407	0.21318	0.23725	—	2,025.38	2,025.38	0.03880	0.26577	4.82796	2,110.37
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.26141	0.21037	2.28986	2.38060	0.01204	0.02407	0.82762	0.85170	0.02407	0.21318	0.23725	—	2,029.68	2,029.68	0.04171	0.26674	0.14201	2,110.35
2027	0.24018	0.20164	2.18551	2.22537	0.01204	0.02407	0.82762	0.85170	0.02407	0.21318	0.23725	—	1,989.27	1,989.27	0.04171	0.26674	0.12496	2,069.92
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.03061	0.02467	0.27003	0.28045	0.00145	0.00306	0.09650	0.09956	0.00306	0.02489	0.02796	—	245.928	245.928	0.00482	0.03257	0.28267	256.036
2027	0.05722	0.04797	0.49255	0.53622	0.00278	0.00556	0.19029	0.19585	0.00556	0.04897	0.05453	—	464.599	464.599	0.00926	0.06174	0.48534	483.715
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.00559	0.00450	0.04928	0.05118	0.00026	0.00056	0.01761	0.01817	0.00056	0.00454	0.00510	—	40.7162	40.7162	0.00080	0.00539	0.04680	42.3897
2027	0.01044	0.00876	0.08989	0.09786	0.00051	0.00101	0.03473	0.03574	0.00101	0.00894	0.00995	—	76.9197	76.9197	0.00153	0.01022	0.08035	80.0845

2.3. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.05474	0.05147	0.03426	0.27302	0.00062	0.00136	0.04760	0.04896	0.00132	0.01211	0.01342	1.11141	76.1889	77.3003	0.11627	0.00360	0.44003	81.7188
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.04557	0.04284	0.03744	0.19396	0.00058	0.00128	0.04760	0.04889	0.00126	0.01211	0.01336	1.11141	71.8901	73.0015	0.11645	0.00378	0.26496	77.3052
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.04739	0.04459	0.03386	0.20087	0.00054	0.00128	0.04221	0.04349	0.00125	0.01074	0.01199	1.11141	68.0511	69.1625	0.11618	0.00347	0.33079	73.4327
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00865	0.00814	0.00618	0.03666	0.00010	0.00023	0.00770	0.00794	0.00023	0.00196	0.00219	0.18401	11.2666	11.4506	0.01923	0.00057	0.05477	12.1576

2.4. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02310	0.02104	0.02276	0.22017	0.00055	0.00044	0.04760	0.04804	0.00041	0.01211	0.01252	—	56.5288	56.5288	0.00185	0.00237	0.17972	57.4608
Area	0.03041	0.02981	0.00037	0.04349	< 0.000005	0.00008	—	0.00008	0.00006	—	0.00006	—	0.17885	0.17885	0.00001	< 0.000005	—	0.17949
Energy	0.00122	0.00061	0.01114	0.00935	0.00007	0.00085	—	0.00085	0.00085	—	0.00085	—	19.0598	19.0598	0.00211	0.00014	—	19.1538
Water	—	—	—	—	—	—	—	—	—	—	—	0.44313	0.42132	0.86445	0.04551	0.00109	—	2.32628
Waste	—	—	—	—	—	—	—	—	—	—	—	0.66828	0.00000	0.66828	0.06679	0.00000	—	2.33810
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26030	0.26030
Total	0.05474	0.05147	0.03426	0.27302	0.00062	0.00136	0.04760	0.04896	0.00132	0.01211	0.01342	1.11141	76.1889	77.3003	0.11627	0.00360	0.44003	81.7188

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.02168	0.01956	0.02631	0.18461	0.00051	0.00044	0.04760	0.04804	0.00041	0.01211	0.01252	—	52.4089	52.4089	0.00204	0.00256	0.00466	53.2268
Area	0.02267	0.02267	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00122	0.00061	0.01114	0.00935	0.00007	0.00085	—	0.00085	0.00085	—	0.00085	—	19.0598	19.0598	0.00211	0.00014	—	19.1538
Water	—	—	—	—	—	—	—	—	—	—	—	0.44313	0.42132	0.86445	0.04551	0.00109	—	2.32628
Waste	—	—	—	—	—	—	—	—	—	—	—	0.66828	0.00000	0.66828	0.06679	0.00000	—	2.33810
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26030	0.26030
Total	0.04557	0.04284	0.03744	0.19396	0.00058	0.00128	0.04760	0.04889	0.00126	0.01211	0.01336	1.11141	71.8901	73.0015	0.11645	0.00378	0.26496	77.3052
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01968	0.01779	0.02254	0.17006	0.00048	0.00040	0.04221	0.04260	0.00037	0.01074	0.01111	—	48.4818	48.4818	0.00176	0.00225	0.07049	49.2657
Area	0.02649	0.02619	0.00018	0.02145	< 0.000005	0.00004	—	0.00004	0.00003	—	0.00003	—	0.08820	0.08820	< 0.000005	< 0.000005	—	0.08852
Energy	0.00122	0.00061	0.01114	0.00935	0.00007	0.00085	—	0.00085	0.00085	—	0.00085	—	19.0598	19.0598	0.00211	0.00014	—	19.1538
Water	—	—	—	—	—	—	—	—	—	—	—	0.44313	0.42132	0.86445	0.04551	0.00109	—	2.32628
Waste	—	—	—	—	—	—	—	—	—	—	—	0.66828	0.00000	0.66828	0.06679	0.00000	—	2.33810
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26030	0.26030
Total	0.04739	0.04459	0.03386	0.20087	0.00054	0.00128	0.04221	0.04349	0.00125	0.01074	0.01199	1.11141	68.0511	69.1625	0.11618	0.00347	0.33079	73.4327
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00359	0.00325	0.00411	0.03104	0.00009	0.00007	0.00770	0.00778	0.00007	0.00196	0.00203	—	8.02671	8.02671	0.00029	0.00037	0.01167	8.15650
Area	0.00483	0.00478	0.00003	0.00391	< 0.000005	0.00001	—	0.00001	0.00001	—	0.00001	—	0.01460	0.01460	< 0.000005	< 0.000005	—	0.01465
Energy	0.00022	0.00011	0.00203	0.00171	0.00001	0.00015	—	0.00015	0.00015	—	0.00015	—	3.15558	3.15558	0.00035	0.00002	—	3.17113
Water	—	—	—	—	—	—	—	—	—	—	—	0.07337	0.06975	0.14312	0.00753	0.00018	—	0.38514
Waste	—	—	—	—	—	—	—	—	—	—	—	0.11064	0.00000	0.11064	0.01106	0.00000	—	0.38710
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04310	0.04310
Total	0.00865	0.00814	0.00618	0.03666	0.00010	0.00023	0.00770	0.00794	0.00023	0.00196	0.00219	0.18401	11.2666	11.4506	0.01923	0.00057	0.05477	12.1576

3. Construction Emissions Details

3.1. Staging and Site Preparation (2026)

3.1.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67494	0.56713	4.22314	5.97557	0.01684	0.13740	—	0.13740	0.12641	—	0.12641	—	1,823.33	1,823.33	0.07396	0.01479	—	1,829.59
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02774	0.02331	0.17355	0.24557	0.00069	0.00565	—	0.00565	0.00520	—	0.00520	—	74.9315	74.9315	0.00304	0.00061	—	75.1887
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00506	0.00425	0.03167	0.04482	0.00013	0.00103	—	0.00103	0.00095	—	0.00095	—	12.4058	12.4058	0.00050	0.00010	—	12.4483
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.1.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04005	0.03633	0.03175	0.38135	0.00000	0.00000	0.08401	0.08401	0.00000	0.01969	0.01969	—	81.8600	81.8600	0.00220	0.00350	0.00806	82.9671
Vendor	0.01420	0.00842	0.35836	0.11711	0.00201	0.00401	0.07633	0.08034	0.00401	0.02109	0.02510	—	278.249	278.249	0.00534	0.04189	0.01776	290.883
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00164	0.00149	0.00117	0.01604	0.00000	0.00000	0.00337	0.00337	0.00000	0.00079	0.00079	—	3.44824	3.44824	0.00008	0.00014	0.00551	3.49869
Vendor	0.00059	0.00036	0.01443	0.00472	0.00008	0.00016	0.00307	0.00324	0.00016	0.00085	0.00102	—	11.4292	11.4292	0.00022	0.00172	0.01214	11.9598
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00030	0.00027	0.00021	0.00293	0.00000	0.00000	0.00061	0.00061	0.00000	0.00014	0.00014	—	0.57090	0.57090	0.00001	0.00002	0.00091	0.57925
Vendor	0.00011	0.00007	0.00263	0.00086	0.00002	0.00003	0.00056	0.00059	0.00003	0.00016	0.00019	—	1.89223	1.89223	0.00004	0.00029	0.00201	1.98008
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.2. Grading (2026)

3.2.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67494	0.56713	4.22314	5.97557	0.01684	0.13740	—	0.13740	0.12641	—	0.12641	—	1,823.33	1,823.33	0.07396	0.01479	—	1,829.59
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02774	0.02331	0.17355	0.24557	0.00069	0.00565	—	0.00565	0.00520	—	0.00520	—	74.9315	74.9315	0.00304	0.00061	—	75.1887
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.00506	0.00425	0.03167	0.04482	0.00013	0.00103	—	0.00103	0.00095	—	0.00095	—	12.4058	12.4058	0.00050	0.00010	—	12.4483
Dust From Material Movement	—	—	—	—	—	—	0.00000	0.00000	—	0.00000	0.00000	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.2.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04005	0.03633	0.03175	0.38135	0.00000	0.00000	0.08401	0.08401	0.00000	0.01969	0.01969	—	81.8600	81.8600	0.00220	0.00350	0.00806	82.9671
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.02712	0.01102	0.86818	0.19996	0.00463	0.01323	0.18540	0.19863	0.01323	0.05076	0.06399	—	686.531	686.531	0.01102	0.10869	0.04149	719.237
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00164	0.00149	0.00117	0.01604	0.00000	0.00000	0.00337	0.00337	0.00000	0.00079	0.00079	—	3.44824	3.44824	0.00008	0.00014	0.00551	3.49869
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00113	0.00048	0.03492	0.00813	0.00019	0.00054	0.00748	0.00802	0.00054	0.00205	0.00259	—	28.2035	28.2035	0.00045	0.00446	0.02824	29.5714
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00030	0.00027	0.00021	0.00293	0.00000	0.00000	0.00061	0.00061	0.00000	0.00014	0.00014	—	0.57090	0.57090	0.00001	0.00002	0.00091	0.57925
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00021	0.00009	0.00637	0.00148	0.00003	0.00010	0.00137	0.00146	0.00010	0.00037	0.00047	—	4.66941	4.66941	0.00008	0.00074	0.00468	4.89589

3.3. Installation (2026)

3.3.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.05117	0.88304	8.15167	13.5776	0.02823	0.23316	—	0.23316	0.21451	—	0.21451	—	3,046.50	3,046.50	0.12358	0.02472	—	3,056.96
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10285	0.08640	0.79762	1.32854	0.00276	0.02281	—	0.02281	0.02099	—	0.02099	—	298.092	298.092	0.01209	0.00242	—	299.115
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01877	0.01577	0.14557	0.24246	0.00050	0.00416	—	0.00416	0.00383	—	0.00383	—	49.3526	49.3526	0.00200	0.00040	—	49.5220
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.3.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17623	0.15984	0.13969	1.67795	0.00000	0.00000	0.36963	0.36963	0.00000	0.08664	0.08664	—	360.184	360.184	0.00970	0.01541	0.03546	365.055
Vendor	0.08519	0.05053	2.15017	0.70266	0.01204	0.02407	0.45799	0.48207	0.02407	0.12654	0.15061	—	1,669.49	1,669.49	0.03201	0.25133	0.10655	1,745.30
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01715	0.01564	0.01226	0.16805	0.00000	0.00000	0.03530	0.03530	0.00000	0.00826	0.00826	—	36.1244	36.1244	0.00085	0.00151	0.05777	36.6530
Vendor	0.00846	0.00520	0.20609	0.06746	0.00118	0.00236	0.04391	0.04626	0.00236	0.01215	0.01451	—	163.274	163.274	0.00313	0.02459	0.17348	170.854
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00313	0.00285	0.00224	0.03067	0.00000	0.00000	0.00644	0.00644	0.00000	0.00151	0.00151	—	5.98081	5.98081	0.00014	0.00025	0.00957	6.06832
Vendor	0.00154	0.00095	0.03761	0.01231	0.00021	0.00043	0.00801	0.00844	0.00043	0.00222	0.00265	—	27.0319	27.0319	0.00052	0.00407	0.02872	28.2869
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4. Installation (2027)

3.4.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.04428	0.87726	7.88620	13.5987	0.02821	0.21624	—	0.21624	0.19894	—	0.19894	—	3,044.68	3,044.68	0.12351	0.02470	—	3,055.13
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04428	0.87726	7.88620	13.5987	0.02821	0.21624	—	0.21624	0.19894	—	0.19894	—	3,044.68	3,044.68	0.12351	0.02470	—	3,055.13
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24115	0.20258	1.82108	3.14021	0.00651	0.04993	—	0.04993	0.04594	—	0.04594	—	703.076	703.076	0.02852	0.00570	—	705.489
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04401	0.03697	0.33235	0.57309	0.00119	0.00911	—	0.00911	0.00838	—	0.00838	—	116.402	116.402	0.00472	0.00094	—	116.802
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17817	0.16372	0.09733	1.96932	0.00000	0.00000	0.36963	0.36963	0.00000	0.08664	0.08664	—	392.193	392.193	0.00679	0.01444	1.23039	397.898
Vendor	0.08783	0.05185	1.92860	0.65080	0.01204	0.02407	0.45799	0.48207	0.02407	0.12654	0.15061	—	1,633.18	1,633.18	0.03201	0.25133	3.59757	1,712.48
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15499	0.15111	0.12622	1.55075	0.00000	0.00000	0.36963	0.36963	0.00000	0.08664	0.08664	—	354.601	354.601	0.00970	0.01541	0.03183	359.469
Vendor	0.08519	0.05053	2.05929	0.67461	0.01204	0.02407	0.45799	0.48207	0.02407	0.12654	0.15061	—	1,634.66	1,634.66	0.03201	0.25133	0.09312	1,710.45
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03579	0.03489	0.02581	0.36858	0.00000	0.00000	0.08331	0.08331	0.00000	0.01949	0.01949	—	83.9270	83.9270	0.00179	0.00356	0.12264	85.1552
Vendor	0.01998	0.01167	0.46570	0.15273	0.00278	0.00556	0.10362	0.10918	0.00556	0.02868	0.03424	—	377.278	377.278	0.00739	0.05804	0.35774	395.115
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00653	0.00637	0.00471	0.06727	0.00000	0.00000	0.01520	0.01520	0.00000	0.00356	0.00356	—	13.8951	13.8951	0.00030	0.00059	0.02030	14.0984
Vendor	0.00365	0.00213	0.08499	0.02787	0.00051	0.00101	0.01891	0.01993	0.00101	0.00523	0.00625	—	62.4627	62.4627	0.00122	0.00961	0.05923	65.4158
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5. Paving (2027)

3.5.1. Onsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.73566	0.61816	3.93335	5.15536	0.01536	0.14411	—	0.14411	0.13258	—	0.13258	—	1,663.14	1,663.14	0.06746	0.01349	—	1,668.84
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03023	0.02540	0.16164	0.21186	0.00063	0.00592	—	0.00592	0.00545	—	0.00545	—	68.3481	68.3481	0.00277	0.00055	—	68.5826
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00552	0.00464	0.02950	0.03867	0.00012	0.00108	—	0.00108	0.00099	—	0.00099	—	11.3158	11.3158	0.00046	0.00009	—	11.3546
Paving	0.00000	0.00000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5.2. Offsite - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04049	0.03721	0.02212	0.44757	0.00000	0.00000	0.08401	0.08401	0.00000	0.01969	0.01969	—	89.1348	89.1348	0.00154	0.00328	0.27963	90.4313
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00145	0.00141	0.00104	0.01491	0.00000	0.00000	0.00337	0.00337	0.00000	0.00079	0.00079	—	3.39458	3.39458	0.00007	0.00014	0.00496	3.44426
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00026	0.00026	0.00019	0.00272	0.00000	0.00000	0.00061	0.00061	0.00000	0.00014	0.00014	—	0.56201	0.56201	0.00001	0.00002	0.00082	0.57024
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	—	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.02310	0.02104	0.02276	0.22017	0.00055	0.00044	0.04760	0.04804	0.00041	0.01211	0.01252	—	56.5288	56.5288	0.00185	0.00237	0.17972	57.4608
Total	0.02310	0.02104	0.02276	0.22017	0.00055	0.00044	0.04760	0.04804	0.00041	0.01211	0.01252	—	56.5288	56.5288	0.00185	0.00237	0.17972	57.4608
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	0.02168	0.01956	0.02631	0.18461	0.00051	0.00044	0.04760	0.04804	0.00041	0.01211	0.01252	—	52.4089	52.4089	0.00204	0.00256	0.00466	53.2268
Total	0.02168	0.01956	0.02631	0.18461	0.00051	0.00044	0.04760	0.04804	0.00041	0.01211	0.01252	—	52.4089	52.4089	0.00204	0.00256	0.00466	53.2268
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00359	0.00325	0.00411	0.03104	0.00009	0.00007	0.00770	0.00778	0.00007	0.00196	0.00203	—	8.02671	8.02671	0.00029	0.00037	0.01167	8.15650
Total	0.00359	0.00325	0.00411	0.03104	0.00009	0.00007	0.00770	0.00778	0.00007	0.00196	0.00203	—	8.02671	8.02671	0.00029	0.00037	0.01167	8.15650

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	5.77297	5.77297	0.00093	0.00011	—	5.83006
Total	—	—	—	—	—	—	—	—	—	—	—	—	5.77297	5.77297	0.00093	0.00011	—	5.83006
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	5.77297	5.77297	0.00093	0.00011	—	5.83006
Total	—	—	—	—	—	—	—	—	—	—	—	—	5.77297	5.77297	0.00093	0.00011	—	5.83006
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	0.95578	0.95578	0.00015	0.00002	—	0.96523

Total	—	—	—	—	—	—	—	—	—	—	—	—	0.95578	0.95578	0.00015	0.00002	—	0.96523

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00122	0.00061	0.01114	0.00935	0.00007	0.00085	—	0.00085	0.00085	—	0.00085	—	13.2869	13.2869	0.00118	0.00003	—	13.3237
Total	0.00122	0.00061	0.01114	0.00935	0.00007	0.00085	—	0.00085	0.00085	—	0.00085	—	13.2869	13.2869	0.00118	0.00003	—	13.3237
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00122	0.00061	0.01114	0.00935	0.00007	0.00085	—	0.00085	0.00085	—	0.00085	—	13.2869	13.2869	0.00118	0.00003	—	13.3237
Total	0.00122	0.00061	0.01114	0.00935	0.00007	0.00085	—	0.00085	0.00085	—	0.00085	—	13.2869	13.2869	0.00118	0.00003	—	13.3237
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00022	0.00011	0.00203	0.00171	0.00001	0.00015	—	0.00015	0.00015	—	0.00015	—	2.19979	2.19979	0.00019	< 0.000005	—	2.20590
Total	0.00022	0.00011	0.00203	0.00171	0.00001	0.00015	—	0.00015	0.00015	—	0.00015	—	2.19979	2.19979	0.00019	< 0.000005	—	2.20590

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.02140	0.02140	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00127	0.00127	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00774	0.00714	0.00037	0.04349	< 0.000005	0.00008	—	0.00008	0.00006	—	0.00006	—	0.17885	0.17885	0.00001	< 0.000005	—	0.17949
Total	0.03041	0.02981	0.00037	0.04349	< 0.000005	0.00008	—	0.00008	0.00006	—	0.00006	—	0.17885	0.17885	0.00001	< 0.000005	—	0.17949
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.02140	0.02140	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00127	0.00127	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.02267	0.02267	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.00391	0.00391	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.00023	0.00023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landsca Equipment	0.00070	0.00064	0.00003	0.00391	< 0.000005	0.00001	—	0.00001	0.00001	—	0.00001	—	0.01460	0.01460	< 0.000005	< 0.000005	—	0.01465
Total	0.00483	0.00478	0.00003	0.00391	< 0.000005	0.00001	—	0.00001	0.00001	—	0.00001	—	0.01460	0.01460	< 0.000005	< 0.000005	—	0.01465

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.44313	0.42132	0.86445	0.04551	0.00109	—	2.32628
Total	—	—	—	—	—	—	—	—	—	—	—	0.44313	0.42132	0.86445	0.04551	0.00109	—	2.32628
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.44313	0.42132	0.86445	0.04551	0.00109	—	2.32628
Total	—	—	—	—	—	—	—	—	—	—	—	0.44313	0.42132	0.86445	0.04551	0.00109	—	2.32628
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.07337	0.06975	0.14312	0.00753	0.00018	—	0.38514
Total	—	—	—	—	—	—	—	—	—	—	—	0.07337	0.06975	0.14312	0.00753	0.00018	—	0.38514

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.66828	0.00000	0.66828	0.06679	0.00000	—	2.33810
Total	—	—	—	—	—	—	—	—	—	—	—	0.66828	0.00000	0.66828	0.06679	0.00000	—	2.33810
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.66828	0.00000	0.66828	0.06679	0.00000	—	2.33810
Total	—	—	—	—	—	—	—	—	—	—	—	0.66828	0.00000	0.66828	0.06679	0.00000	—	2.33810
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.11064	0.00000	0.11064	0.01106	0.00000	—	0.38710
Total	—	—	—	—	—	—	—	—	—	—	—	0.11064	0.00000	0.11064	0.01106	0.00000	—	0.38710

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26030	0.26030
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26030	0.26030
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26030	0.26030
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26030	0.26030
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04310	0.04310
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04310	0.04310

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Staging and Site Preparation	Site Preparation	10/1/2026	10/21/2026	5.00000	15.0000	—
Grading	Grading	10/22/2026	11/11/2026	5.00000	15.0000	—
Installation	Building Construction	11/12/2026	4/28/2027	5.00000	120.000	—
Paving	Paving	4/29/2027	5/19/2027	5.00000	15.0000	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Staging and Site Preparation	Skid Steer Loaders	Diesel	Average	2.00000	8.00000	71.0000	0.37000
Staging and Site Preparation	Off-Highway Trucks	Diesel	Average	1.000000	8.00000	376.000	0.38000
Grading	Skid Steer Loaders	Diesel	Average	2.00000	8.00000	71.0000	0.37000
Grading	Off-Highway Trucks	Diesel	Average	1.000000	8.00000	376.000	0.38000

Installation	Tractors/Loaders/Back	Diesel	Average	1.000000	6.00000	84.0000	0.37000
Installation	Cement and Mortar Mixers	Diesel	Average	1.000000	2.00000	10.00000	0.56000
Installation	Rough Terrain Forklifts	Diesel	Average	2.00000	6.00000	96.0000	0.40000
Installation	Bore/Drill Rigs	Diesel	Average	2.00000	6.00000	83.0000	0.50000
Installation	Skid Steer Loaders	Diesel	Average	2.00000	6.00000	71.0000	0.37000
Installation	Off-Highway Trucks	Diesel	Average	1.000000	8.00000	376.000	0.38000
Paving	Paving Equipment	Diesel	Average	1.000000	6.00000	89.0000	0.36000
Paving	Rollers	Diesel	Average	1.000000	6.00000	36.0000	0.38000
Paving	Off-Highway Trucks	Diesel	Average	1.000000	8.00000	376.000	0.38000

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Staging and Site Preparation	Worker	10.00000	11.8900	LDA,LDT1,LDT2
Staging and Site Preparation	Vendor	10.00000	9.10000	HHDT,MHDT
Staging and Site Preparation	Hauling	0.00000	20.0000	HHDT
Staging and Site Preparation	Onsite truck	0.00000	—	HHDT
Grading	Worker	10.00000	11.8900	LDA,LDT1,LDT2
Grading	Vendor	0.00000	9.10000	HHDT,MHDT
Grading	Hauling	10.00000	20.0000	HHDT
Grading	Onsite truck	—	—	HHDT
Installation	Worker	44.0000	11.8900	LDA,LDT1,LDT2
Installation	Vendor	60.0000	9.10000	HHDT,MHDT
Installation	Hauling	0.00000	20.0000	HHDT
Installation	Onsite truck	—	—	HHDT
Paving	Worker	10.00000	11.8900	LDA,LDT1,LDT2
Paving	Vendor	0.00000	9.10000	HHDT,MHDT

Paving	Hauling	0.00000	20.0000	HHDT
Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Staging and Site Preparation	—	—	0.00000	0.00000	0.00000
Grading	—	—	0.00000	0.00000	0.00000
Paving	0.00000	0.00000	0.00000	0.00000	0.00000

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Phase Name	Land Use	Area Paved (acres)	% Asphalt
Paving	General Light Industry	0.00000	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00000	203.983	0.03300	0.00400
2027	0.00000	203.983	0.03300	0.00400

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Light Industry	4.96000	1.99000	5.00000	1,657.62	66.3008	26.6005	66.8355	22,157.6

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
General Light Industry	Wood Fireplaces	0	0
General Light Industry	Gas Fireplaces	0	0
General Light Industry	Propane Fireplaces	0	0
General Light Industry	Electric Fireplaces	0	0
General Light Industry	No Fireplaces	0	0
General Light Industry	Conventional Wood Stoves	0	0
General Light Industry	Catalytic Wood Stoves	0	0
General Light Industry	Non-Catalytic Wood Stoves	0	0
General Light Industry	Pellet Wood Stoves	0	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0.00000	0.00000	1,500.00	500.000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00000
Summer Days	day/yr	180.000

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	10,330.0	203.983	0.0330	0.0040	41,458.6

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	231,250	0.00000

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)

General Light Industry	1.24000	0.00000

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088.00	0.30000	4.00000	4.00000	18.0000

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	23.9100	annual days of extreme heat
Extreme Precipitation	2.60000	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00000	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A

Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	59.9004
AQ-PM	50.8152
AQ-DPM	13.2918
Drinking Water	52.8662
Lead Risk Housing	34.1021
Pesticides	90.9310
Toxic Releases	26.0565
Traffic	2.98750
Effect Indicators	—
CleanUp Sites	61.3848
Groundwater	87.3651
Haz Waste Facilities/Generators	0.00000
Impaired Water Bodies	66.7367
Solid Waste	89.8282
Sensitive Population	—
Asthma	23.3051
Cardio-vascular	46.7473
Low Birth Weights	33.9492
Socioeconomic Factor Indicators	—
Education	53.1258
Housing	3.07985
Linguistic	39.2069
Poverty	46.1809
Unemployment	63.4175

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	45.95149493
Employed	44.42448351
Median HI	57.64147312
Education	—
Bachelor's or higher	35.78852817
High school enrollment	100
Preschool enrollment	62.14551521
Transportation	—
Auto Access	94.58488387
Active commuting	50.32721673
Social	—
2-parent households	98.83228538
Voting	83.69049147
Neighborhood	—
Alcohol availability	84.55023739
Park access	2.194276915
Retail density	3.438983703
Supermarket access	33.82522777
Tree canopy	92.74990376
Housing	—
Homeownership	63.76235083
Housing habitability	70.2681894
Low-inc homeowner severe housing cost burden	89.05427948
Low-inc renter severe housing cost burden	87.89939689

Uncrowded housing	44.92493263
Health Outcomes	—
Insured adults	48.58206082
Arthritis	0.0
Asthma ER Admissions	76.5
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	35.9
Cognitively Disabled	72.6
Physically Disabled	77.4
Heart Attack ER Admissions	55.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0

Children	23.1
Elderly	36.8
English Speaking	45.9
Foreign-born	44.7
Outdoor Workers	4.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	95.9
Traffic Density	2.0
Traffic Access	0.0
Other Indices	—
Hardship	56.5
Other Decision Support	—
2016 Voting	69.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	44.0000
Healthy Places Index Score for Project Location (b)	62.0000
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

8.1. Justifications

Screen	Justification
Land Use	14.5 acre project
Construction: Construction Phases	Based on data provided by applicant. assuming staging and site preparation will occur at the same time.
Construction: Off-Road Equipment	based on equipment data from applicant
Construction: Trips and VMT	2 trips per flat bed truck during staging activity (5 trucks total); otherwise based on applicant estimates. Assumes 10 trips per day of hauling during grading to account for potential waste disposal of construction soil or debris.

8.3. Land Use

Model Parameter	Units	Default Value	New Value
Lot Area	acre	0.02296	14.5000
Landscape Area	sq. ft	—	0.00000

8.4. Construction

8.4.1. Construction Phases

Phase Type	Phase Name	Model Parameter	Default Value	New Value
Grading	Grading	Start Date	11/14/2026	10/22/2026
Grading	Grading	End Date	12/26/2026	11/11/2026
Grading	Grading	Work Days per Phase	30.0000	15.0000
Paving	Paving	Start Date	2/21/2028	4/29/2027
Paving	Paving	End Date	3/20/2028	5/19/2027

Paving	Paving	Work Days per Phase	20.0000	15.0000

8.4.2. Off-Road Equipment

Phase Name	Equipment Type	Model Parameter	Default Value	New Value
Installation	Tractors/Loaders/Backhoes	Number per Day	3.00000	1.000000
Installation	Tractors/Loaders/Backhoes	Hours Per Day	7.00000	6.00000
Installation	Rough Terrain Forklifts	Horsepower	82.0000	96.0000
Installation	Rough Terrain Forklifts	Load Factor	0.20000	0.40000
Paving	Paving Equipment	Number per Day	2.00000	1.000000
Paving	Paving Equipment	Hours Per Day	8.00000	6.00000
Paving	Rollers	Number per Day	2.00000	1.000000
Paving	Rollers	Hours Per Day	8.00000	6.00000

8.4.6. Trips and VMT

Phase Name	Trip Type	Model Parameter	Default Value	New Value
Staging and Site Preparation	Worker	One-Way Trips per Day	7.50000	10.00000
Grading	Worker	One-Way Trips per Day	7.50000	10.00000
Grading	Hauling	One-Way Trips per Day	0.00000	10.00000
Installation	Worker	One-Way Trips per Day	0.42000	44.0000
Installation	Vendor	One-Way Trips per Day	0.16390	60.0000
Paving	Worker	One-Way Trips per Day	7.50000	10.00000

Duncan Road Solar

Displaced Energy Production during 35-year Project life (2023 CA Power Mix and Increased Renewable Accountability)

Annual Energy Production		Annual Average Solar Radiation Hours/Day/Year
Grid Size (MW)	3	
Total hrs/year	2,920	
% Operational time[1]	100%	
Operational hours/year	2,920	
kWh produced per year	8,760,000	
Assumed Heat Rate (Btu/kWh)	10,000	
Annual Fuel Equivalent (MMBtu)[2]	87,600	

CA Power Mix[3]		Annual Fuel Displacement (MMBtu)
Coal[4]	1.77%	1,551
Large Hydro	11.70%	10,249
Natural Gas[4]	36.56%	32,027
Nuclear	9.31%	8,152
Oil	0.01%	5
Other (petroleum coke/waste heat)	0.07%	61
Renewables	31.40%	27,280
Unspecified sources of Power	3.69%	3,232
Total	**100.0%**	**87,600**

Input provided by client	Units
3	MW Generation
8	hrs/day
24	hrs/day
365	days/year
8760	MWh/year
1000	kWh/MWh
8,760,000	kWh/year

Annual Pollutant Displacement[5]

Natural Gas Turbine Emissions

Pollutant	AP-42 Emission Factor (lb/MMBtu)[5]	Controlled Emission Factor (lb/MMBtu)	Controlled Emissions (lb)	Controlled Emissions (ton)	AP-42 Emission Factor Source Notes[5]
NO_x	0.099	0.099	3,171	1.59	Table 3.1-1, lean premix, Assume SCR Control Efficiency
CO	0.015	0.015	480	0.24	Table 3.1-1, lean premix, Assume Ox. Cat. Control Efficiency
PM_{10}	0.0047	0.0047	151	0.08	Table 3.1-2a, PM (condensable)
$PM_{2.5}$	0.0019	0.0019	61	0.03	Table 3.1-2a, PM (filterable)
SO_2	0.0034	0.0034	109	0.05	Table 3.1-2a
CO_2	110	110	3,522,970	1,761.48	Table 3.1-2a

Coal Combustion Emissions

Pollutant	AP-42 Emission Factor (lb/ton)[6]	Controlled Emission Factor (lb/ton)	Emissions (lb)[7]	Emissions (ton)	AP-42 Emission Factor Source Notes[6]
NOx	12	12	775	0.39	Table 1.1-3 pulverized coal, wall fired, bituminous coal NSPS
CO	0.5	0.5	32	0.02	Table 1.1-3 pulverized coal, wall fired, bituminous coal NSPS
PM_{10}[8]	0.46	0.084	5	0.00	Table 1.1-4, PC-fired dry bottom wall fired, scrubber control
$PM_{2.5}$[8]	1.12	0.06	4	0.00	Table 1.1-4, PC-fired dry bottom wall fired, scrubber control
SO_2[9]	3.95	0.57	37	0.02	Table 1.1-3 pulverized coal, wall fired, bituminous coal NSPS
CO_2	5000	5000	322,230	161.11	Table 1.1-20
Total NMOC	0.06	0.06	4	0.00	Table 1.1-19 assumed all hydrocarbons are reactive
CH_4	0.04	0.04	3	0.00	Table 1.1-19
N_2O	0.03	0.03	2	0.00	Table 1.1-19

Total Displaced Emissions Associated With Direct Combustion			
Pollutant	tons/year[1]	tons/lifetime (35 years (Static))	tons/lifetime (35 years (Increased Renewable))
ROG (NMHC)	0	0	
NO_x	2	59	
CO	0	9	
PM_{10}	0	3	
$PM_{2.5}$	0	1	
SO_x	0	3	
CO_2E (Metric Tons)	1,775	62,134	35,931

Notes:

1. [illegible]
2. [illegible]
3. CA Power Mix assumptions are based on data from the 2023 Total System Electric Generation Table. [illegible]
4. [illegible]
5. EPA Air Pollutant Emission Factors AP-42 Section 3.1, Stationary Gas Turbines
6. EPA Air Pollutant Emission Factors AP-42 Section 1.1, Bituminous and Subbituminous Coal Combustion
7. [illegible]
8. [illegible]
9. SO_2 [illegible]
10. CO_2E [illegible]

Comments

[illegible]	1
GWP CH4	30
GWP N2O	273

Duncan Road Solar

Displaced Energy Production during 35-year Project life (2023 CA Power Mix and Increased Renewable Accountability)

[illegible URL]

Offset based on increased Renewable Percentage

Year	Renewable %	Change in %	reduction per year	Non-Renewable %	Total MT CO2E	[illegible] per %
2024	[illegible]			[illegible]	1,778	[illegible]
2025	[illegible]			[illegible]	1,774	
2026	[illegible]			[illegible]	1,773	
2027	[illegible]			[illegible]	1,772	
2028	[illegible]			[illegible]	1,771	
2029	[illegible]			[illegible]	1,770	
2030	60%	[illegible]	[illegible]	40.00%	[illegible]	
2031	[illegible]			[illegible]	[illegible]	
2032	[illegible]			[illegible]	[illegible]	
2033	[illegible]			[illegible]	[illegible]	
2034	[illegible]			[illegible]	[illegible]	
2035	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
2036	[illegible]			[illegible]	[illegible]	
2037	[illegible]			[illegible]	[illegible]	
2038	[illegible]			[illegible]	[illegible]	
2039	[illegible]			[illegible]	[illegible]	
2040	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
2041	[illegible]			[illegible]	[illegible]	
2042	[illegible]			[illegible]	[illegible]	
2043	[illegible]			[illegible]	[illegible]	
2044	[illegible]			[illegible]	[illegible]	
2045	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

*[illegible]

Total Offset Over Project Lifetime	[illegible]
Annual offset [illegible]	[illegible]

RINCON CONSULTANTS

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August 6, 2026
Project No: 25-17912

Ryan Nyberg
RPCA Solar 11, LLC
44 Montgomery Street, Suite 3150
San Francisco, California 94104
Via email: ryan@renewprop.com

Subject: Limited Biological Resources Assessment Memorandum for the Duncan Road Solar Project in San Joaquin County, California

Dear Ryan:

This memorandum describes the methods and results of an environmental review conducted to describe biological resources in the approximate 15.3-acre Duncan Road Solar Project (project) area and 100-foot buffer (survey area), located in a 19.5-acre parcel (Assessor's Parcel Number 09117006) in San Joaquin County, California.

Background and Project Description

Land uses surrounding the project area include agriculture and rural residential parcels in unincorporated San Joaquin County, north of the unincorporated community of Linden (Attachment 1, Figure 4). The project area is situated on the northeast corner of the intersection of Duncan Road and East Comstock Road (Attachment 1, Figure 2), at an elevation of approximately 100 to 140 feet above mean sea level. The latitude and longitude of the approximate center of the site is 38.0461833° North, -121.0945806° West.

The proposed project consists of a ground-mounted solar photovoltaic energy facility. The project will generate up to three megawatts of clean, reliable solar energy by utilizing photovoltaic solar modules, inverters, and appurtenant electrical equipment to convert the energy from the sun into to usable power distributed to the electrical grid. The modules will be mounted on a steel racking system employing single-axis tracker technology that efficiently tracks the movement of the sun throughout the day and maximizes the efficiency of solar collection. The rows of modules will be anchored in the ground using driven piers, and the overall height of the array is not expected to exceed 15 feet above the existing ground surface at maximum tilt. The project will interconnect to the existing Pacific Gas and Electric Company electrical distribution system adjacent to the site along East Comstock Road.

Regulatory Setting

Regulated or sensitive resources described in this assessment include special-status plant and wildlife species, native nesting birds, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement corridors, federally designated Critical Habitat, and locally protected resources. Regulatory authority over biological resources is shared by federal, state, and local jurisdictions. Primary authority for regulation of general biological resources lies within the land use control and planning authority of local jurisdictions. See Attachment 2 for a detailed description of the Regulatory Setting.

Literature 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:

- United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) Trust Resource Report (USFWS 2026a)
- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB 2026)
- California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Vascular Plants (CNPS 2026)
- United States Department of Agriculture (USDA), Natural Resources Conservation Service Web Soil Survey (USDA 2026a)
- USFWS Critical Habitat Portal (USFWS 2026b)
- USFWS National Wetland Inventory (NWI) Wetland Mapper (USFWS 2026c)
- CDFW Biogeographic Information and Observation System (CDFW 2026a)
- CDFW Special Animals List (CDFW 2026b)
- San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP 2000)

The CNDDB and CNPS database searches included the 7.5-minute United States Geological Survey *Linden, California* quadrangle and surrounding eight quadrangles (referred to as a "nine-quad search"). The IPaC search included the project area and a two-mile buffer surrounding the project area. Following a review of these resources, Rincon Consultants (Rincon) also reviewed relevant life history information on those species documented as occurring in the region, including habitat type, soils, and elevation preferences.

The potential for wildlife movement corridors was evaluated based on the California Essential Habitat Connectivity Project commissioned by the California Department of Transportation and CDFW (Spencer et al. 2010).

Field Survey

A general biological field survey was performed by Rincon biologist Nicole Carpenter on March 4, 2026. The survey was conducted by walking throughout the entirety of the project area to document existing conditions and evaluate the potential for the project area to support special-status plant and wildlife species, sensitive vegetation communities, and potentially jurisdictional aquatic resources. Binoculars were used to aid in identification of resources and to achieve visual coverage of the entire survey area. An aerial photograph and georeferenced mobile map with an overlay of the survey area boundary was used to map vegetation communities and record any special-status or other sensitive biological resources while in the field. Representative photographs were taken to document existing conditions, vegetation communities, and sensitive biological resources (Attachment 3).

Definition of Special-Status Species

For the purposes of this report, special-status species include:

- Plant and wildlife species listed as threatened or endangered under the federal Endangered Species Act (ESA), including species proposed for listing
- Plant and wildlife species listed as threatened or endangered under the California Endangered Species Act (CESA), including species that are candidates for listing
- Wildlife species designated as Fully Protected by the California Fish and Game Commission, and as Species of Special Concern (SSC) by CDFW
- Plant species with CNPS California Rare Plant Ranks 1A, 1B, 2A and 2B, per the following definitions:
  - Rank 1A = Presumed extirpated in California and rare or extinct elsewhere
  - Rank 1B = Rare, threatened, or endangered in California and elsewhere

- Rank 2A = Presumed extirpated in California but common elsewhere
- Rank 2B = Rare, threatened, or endangered in California, but common elsewhere.

Special-status plant and wildlife species are discussed below in terms of California Environmental Quality Act (CEQA) thresholds of significance. A threshold of significance for a given environmental impact defines the level of effect above which the lead agency will normally consider impacts to be significant, and below which it will normally consider impacts to be less than significant. Lead agencies are responsible for establishing the thresholds of significance for all documents they prepare.

A list of special-status plant species with potential to occur in the search area defined above is included in Attachment 4, and a list of special-status wildlife species is included in Attachment 5. Definitions regarding potential for species occurrence for this assessment are as follows:

- **Not Expected to Occur.** Habitat within and adjacent to the project area is lacking 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 larger vicinity of the project area.
- **Low.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the project area is unsuitable or of poor quality. Because of this, the species is highly unlikely to be found within the project area. Any documented occurrences of the species are likely further in distance than possible for the species to disperse to the site, or the date of the occurrence is several decades old, or the vicinity of the project area has been developed in a manner that likely precludes the species from presently occurring.
- **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 area is unsuitable. There are recently documented occurrences in the near vicinity of the project area; therefore, the species has a moderate probability of occurring within the project area.
- **High.** All of the habitat components meeting the species requirements are present, and/or most of the habitat on or adjacent to the project area is highly suitable. There are documented occurrences of the species on or immediately adjacent to the project area; therefore, the species has a high probability of occurring within the project area.
- **Present.** Species was observed within the project area during field surveys or has been recorded (i.e., CNDDB, or other reports) within the project area recently (within the last ±10 years).

Based on these definitions, there would be no impact or less-than-significant impacts to species that are not expected to occur or that have a low potential to occur in the project area.

Results

Soils

Two soil types, Boggiano clay loam, 0 to 2 percent slopes and Cogna loam, 0 to 2 percent slopes, have been mapped in the project area (USDA 2026a; Attachment 1, Figure 3). These soil types are not on the USDA Natural Resources Conservation Service List of Hydric Soils (USDA 2026b).

Boggiano soils are moderately well-drained soils formed from alluvium derived from mixed rock sources. They are typically found on valley floors at elevations from approximately 40 to 50 feet above mean sea level. The frequency of flooding is rare, the frequency of ponding is none, and the available water supply is moderate (about 8.6 inches).

Cogna soils are well-drained soils formed from fine-loamy alluvium derived from igneous, metamorphic, and sedimentary rock. They are typically found on valley floors at elevations from approximately 70 to

150 feet above mean sea level. The frequency of flooding is rare, the frequency of ponding is none, and the available water supply is high (about 9.3 inches).

Land Cover Types

The project area can be characterized as developed/disturbed and is dominated by non-native grasses and forbs. Orchards are present on adjacent properties surrounding the project area (Attachment 1, Figure 4). Non-native grasses and forbs such as charlock (*Sinapis arvensis*), cheeseweed (*Malva parviflora*), ripgut brome (*Bromus diandrus*), and wild oats (*Avena* sp.) were observed during the field survey. Developed features include the residence in the project area, Duncan Road to the west, East Comstock Road to the south, and rural residences south and north of the project area boundary. The site is disked at least once annually.

Special-Status Plant Species

Results of the IPaC, CNDDB, and CNPS searches identified 14 special-status plant species known to occur within the 2-mile/nine-quad search radius of the project area (CNPS 2026, CNDDB 2026, USFWS 2026a). None of these are expected to occur due to a lack of suitable habitat in the project area or the project area is outside of the species known elevation range. In addition, the disturbed nature of the site likely precludes special-status plants from occurring. Attachment 4 includes a list of the 14 special-status plant species evaluated for potential to occur in the project area.

Special-Status Wildlife Species

Results of the CNDDB and IPaC searches indicated 19 special-status wildlife species are known to occur within the 2-mile/nine-quad search radius of the project area (CNDDB 2026, USFWS 2026a). Of these, two species have a moderate potential to occur in the project area and are discussed further below. The remaining 17 are not expected to occur or have a low potential to occur due to a lack of suitable habitat or the project area is outside of the species' known range. Therefore, these 17 species were removed from further consideration. Attachment 5 includes a list of the 19 special-status wildlife species evaluated for potential to occur in the project area.

Swainson's hawk (*Buteo swainsoni*; state threatened) breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or rows of trees. Swainson's hawk requires suitable foraging areas within 10–12 miles of a nest site, such as grasslands, alfalfa, or grain fields that support small mammal populations. Swainson's hawks are known to nest in single trees on agricultural landscapes and occasionally in orchards. Suitable foraging habitat in the vicinity of the project area is present in the scattered surrounding agricultural fields (Attachment 3). Trees that may support nesting are present in adjacent rural residential areas. In addition, there are 6 documented occurrences of Swainson's hawk within 5 miles of the project area (CNDDB 2026). This species is covered under the SJMSCP.

Crotch's bumble bee (*Bombus crotchii*; state candidate for listing) habitat requirements include availability of suitable colony nesting sites, floral resources to obtain nectar and pollen throughout the duration of the colony period (spring, summer and fall), and suitable overwintering sites for queens. Most bumble bees are primitively eusocial insects that live in colonies composed of a queen, workers, and, near the end of the season, reproductive members of the colony (new queens, or gynes, and males). Nest sites typically include underground cavities, wood or rock piles, brush piles, and other cavities on open west-southwest slopes bordered by trees. Little is known about hibernacula or overwintering sites. Suitable floral resources and potential nesting sites were present in the project area during the field survey (Attachment 3). While there are no documented CNDDB occurrences within the nine-quad search, the project area is within the current range for this species. The nearest documented occurrence in Bumble Bee Watch is approximately 23 miles northeast of the project area (Xerces Society 2026).

This species is not covered under the SJMSCP. As such, this species would need to be evaluated separately from the SJMSCP, as species that are candidates for listing under CESA are afforded the same protections as if they were formally listed. The following Avoidance and Minimization Measure (AMM) would reduce potential impacts to Crotch's bumble bees that may occur in the project area during the Colony Active Period (April – August) to less than significant.

AMM-1 Crotch's Bumble Bee. Should construction begin during the Colony Active Period (April – August), a formal habitat assessment shall be performed by a qualified biologist prior to initiating ground disturbing activities to determine if suitable nesting or foraging habitat is present in the project area. The assessment shall include:

1. Review of occurrence record data
2. Analysis of foraging, nesting, and overwintering resources
3. Documentation of plant species observed (including what is blooming at the time of the survey and percent cover)

The locations of any nesting resources, including rodent burrows, cavities, thatched grasses, brush, rock piles, logs, and manmade structures like dumped furniture, shall be mapped during the assessment. Areas adjacent to the project shall also be considered, as accessible, to determine if there is suitable nesting or foraging habitat for Crotch's bumble bee.

If suitable nesting and foraging resources are detected in the project area during the habitat assessment, protocol-surveys following the CDFW *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species* (CDFW 2023) will be conducted by a qualified biologist (i.e. someone with a valid CDFW Scientific Collecting Permit for Crotch's bumble bee) to determine if Crotch's bumble bee is present in the project area. A minimum of three visits will be conducted during the Colony Active Period (April – August) and will be spaced 2-4 weeks apart. If no Crotch's bumble bees are detected on the site, no further mitigation would be required. If Crotch's bumble bees are detected, consultation with CDFW will be initiated to determine the most appropriate strategy to avoid impacts to bumble bees on the site.

If suitable foraging habitat is absent from the project area, but suitable nesting habitat is present and foraging habitat occurs adjacent to the project area, preconstruction nest surveys for Crotch's bumble bee will be conducted according to the CDFW Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species (CDFW 2023) document 48 hours prior to construction to determine if any active Crotch's bumble bee nests are present. If no active Crotch's bumble bee nests are detected during the preconstruction nest survey, no further mitigation would be required. If Crotch's bumble bee nests are detected, they will be avoided by a 50-foot buffer, as possible. If avoidance is not possible, consultation with CDFW will be initiated to determine the most appropriate strategy to avoid impacts to bumble bees on the site.

Critical Habitat

Critical Habitat is a term defined and used in the federal ESA 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 Critical Habitat limits for any special-status wildlife or plant species. The nearest mapped Critical Habitat is approximately 3.70 miles east of the project area for vernal pool fairy shrimp (*Branchinecta lynchi*).

Wildlife Corridors

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 (CDFW 2026b). Due to the disturbed nature of the site and level of development and human disturbance surrounding the site, common wildlife species like raccoon (*Procyon lotor*) may pass through the site to access adjacent patches of cover and foraging habitat, but migratory wildlife use of the site is unlikely.

Potentially Jurisdictional Aquatic Features

No wetlands or other waters have been mapped in or adjacent to the project area by the National Wetlands Inventory (USFWS 2026c), and no wetlands, waters, or other potentially jurisdictional aquatic features were observed in the project area during the field survey.

San Joaquin Multi-Species Habitat Conservation and Open Space Plan

The SJMSCP is a comprehensive conservation planning strategy that addresses the needs of multiple plant and animal species while protecting the region's agricultural interests as the population increases over the next 25 years (2001–2051). The SJMSCP is administered by the San Joaquin Council of Governments, Inc., which is a non-profit corporation established by San Joaquin County and the cities of Escalon, Lathrop, Lodi, Manteca, Ripon, Stockton and Tracy.

The SJMSCP provides coverage for impacts to biological resources pursuant to CEQA, the CESA, and ESA, and is approved and authorized by the CDFW and USFWS. As such, if the project proponent chooses to participate in this permitting pathway, the proposed project will be subject to review under the SJMSCP. As part of this process, the project will be required to comply with all provisions of the SJMSCP, including implementation of applicable Incidental Take Minimization Measures and payment of mitigation fees. These fees must be paid prior to the initiation of construction activities to ensure compliance with the plan and to mitigate potential impacts to covered species and habitats.

Summary

The project area is disturbed and dominated by non-native grasses and forbs. No sensitive habitats or sensitive vegetation communities were detected during the field survey, nor have any been mapped by CDFW or USFWS in the project area, including areas designated as Critical Habitat for federally endangered species or protected wildlife movement corridors. No special-status plants are expected to occur in the project area; however, two special-status wildlife species have a moderate potential to occur in or adjacent to the project area.

Swainson's hawk is Covered Species under the SJMSCP, and the project proponent will be required to comply with all provisions of the SJMSCP; therefore, potential impacts to Swainson's hawk would be mitigated to less than significant through participation in the SJMSCP. Crotch's bumble bee is not considered a Covered Species under the SJMSCP, as this species became a candidate for listing in 2023. Incorporation of the AMM described above would reduce potential impacts to Crotch's bumble bee to less than significant.

Additionally, native nesting birds protected by the MBTA or the California Department of Fish and Game code may use the site and surrounding habitat during the breeding season (typically February 1 through

August 31).To comply with CEQA and the MBTA, a preconstruction nesting bird survey would be required if construction activities were to start during the breeding season.

If you have any questions about this memorandum, please contact Lisa Achter at 530-217-8952 or lachter@rinconconsultants.com.

Sincerely,
Rincon Consultants, Inc.

Nicole Carpenter
Biologist

Lisa Achter
Senior Biologist, Project Manager

Attachments

Attachment 1 Figures
Attachment 2 Regulatory Setting
Attachment 3 Site Photographs
Attachment 4 Plant Species with Potential to Occur
Attachment 5 Wildlife Species with Potential to Occur

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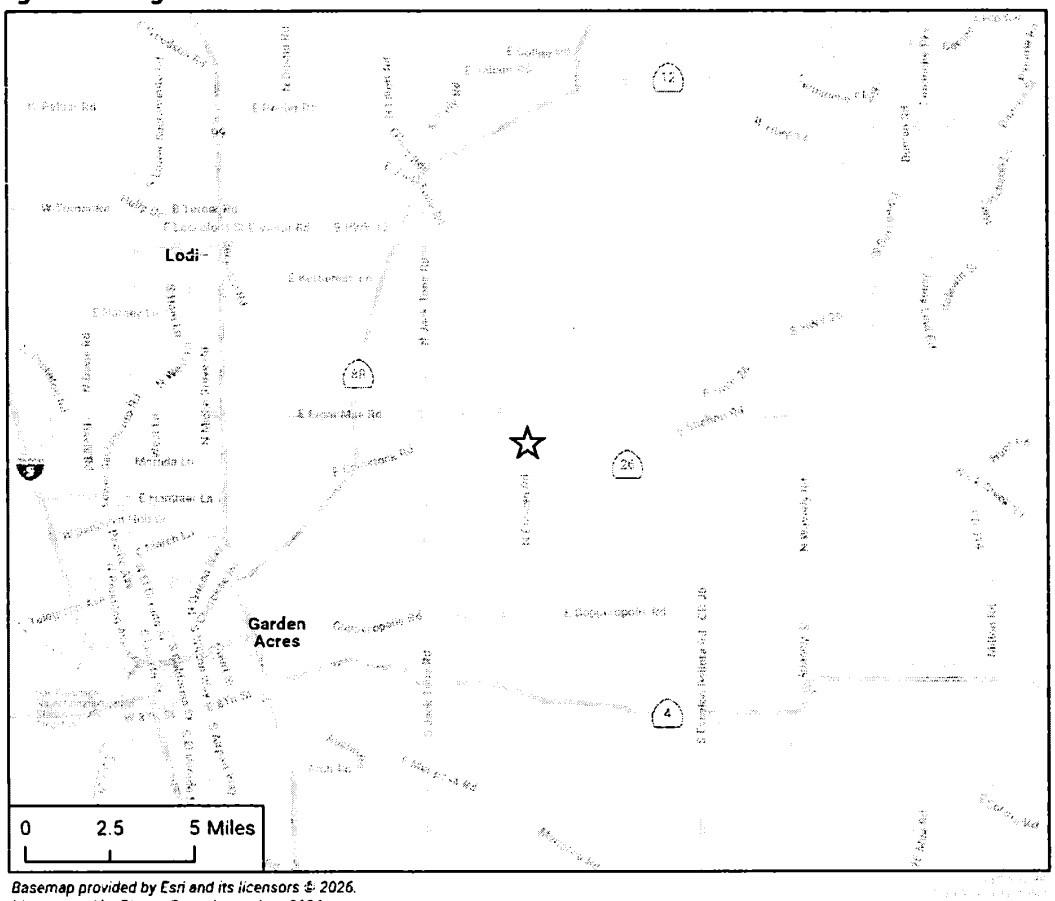
Figure 1 Regional Location



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Map created by Rincon Consultants, Inc., 2026.

☆ Project Location

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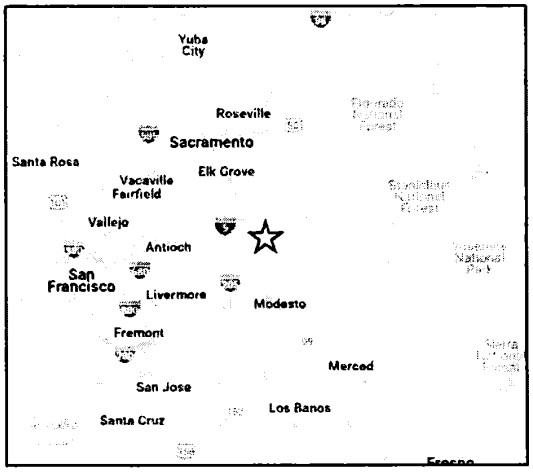

Figure 2 Project Area

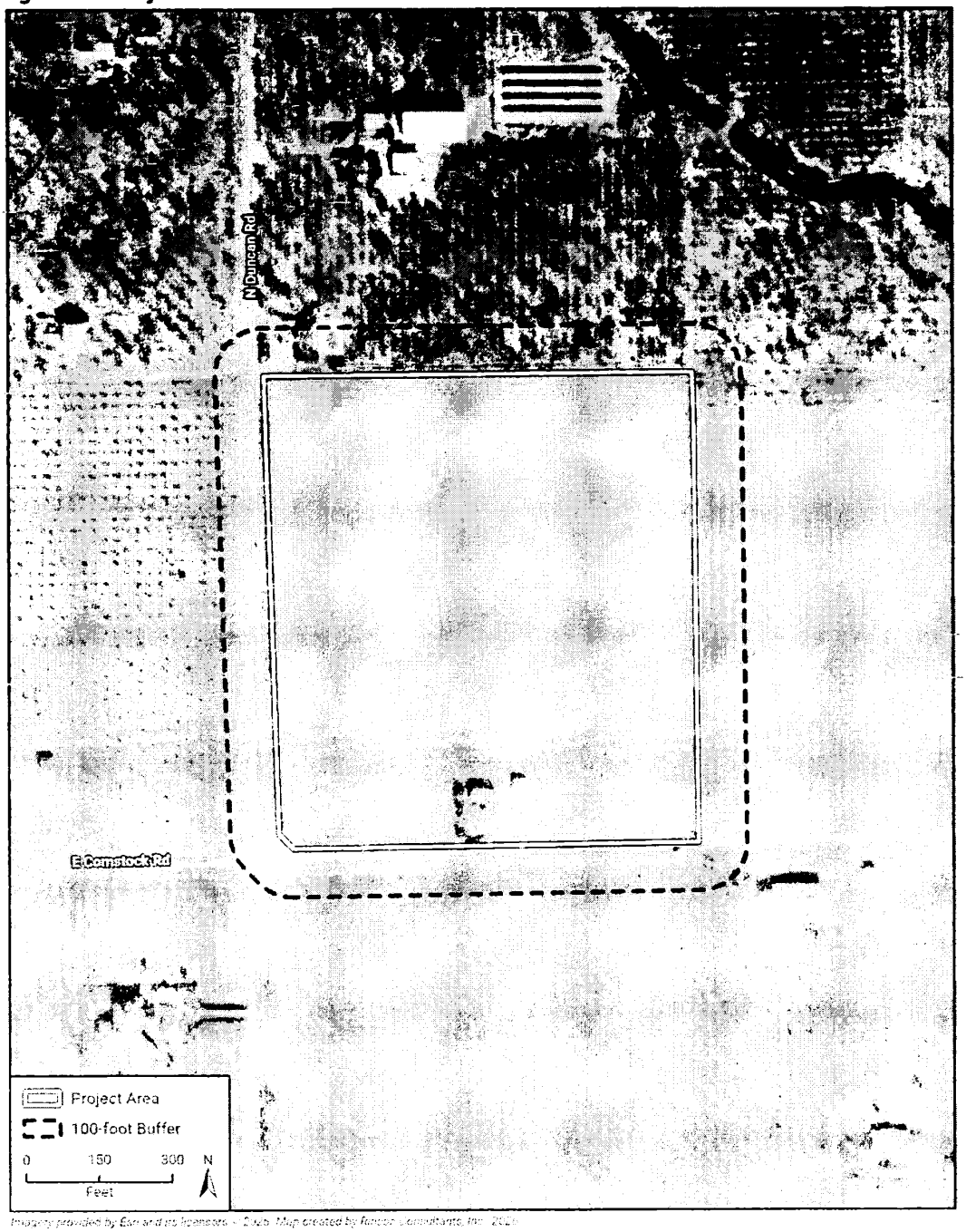

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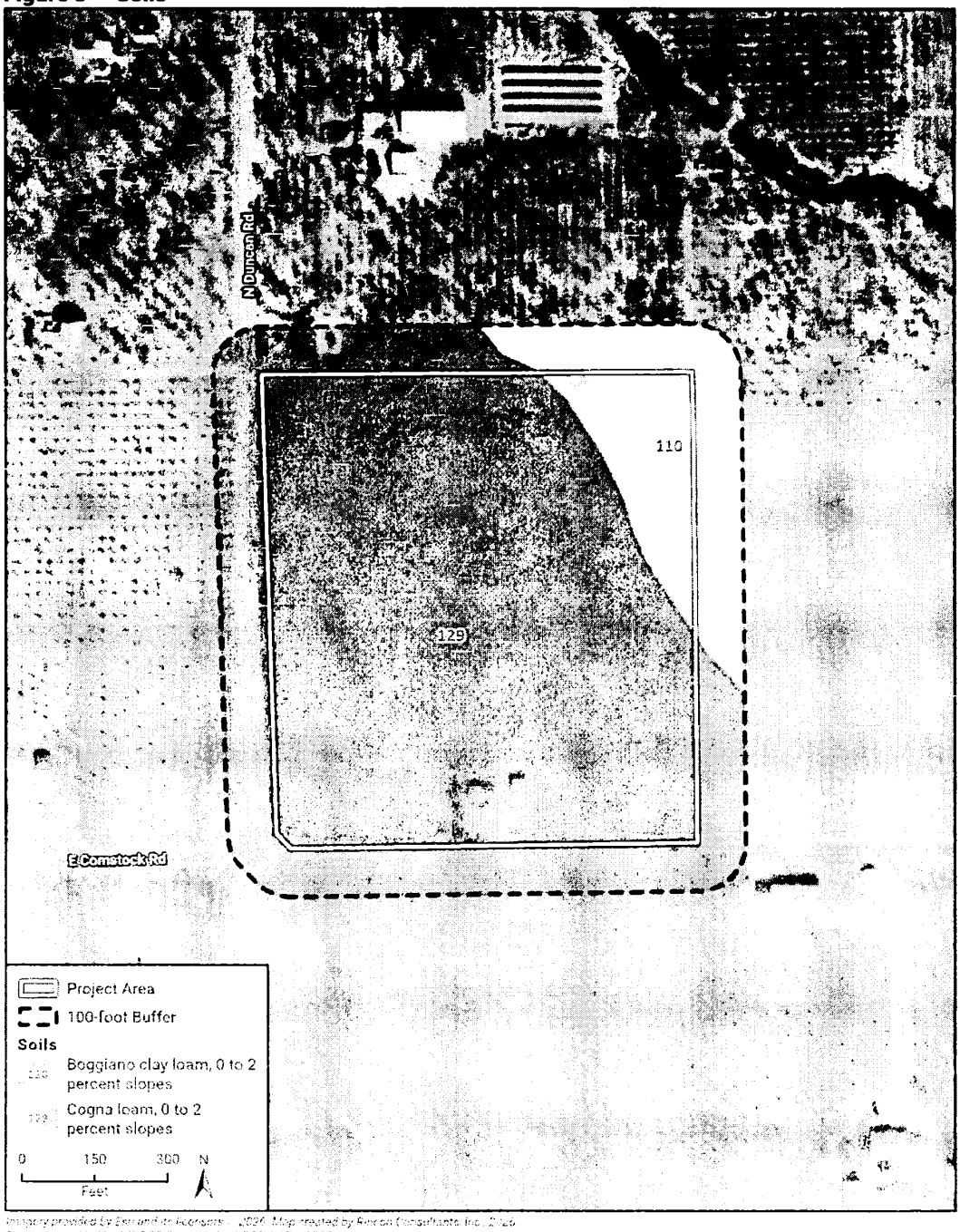
Figure 3 Soils



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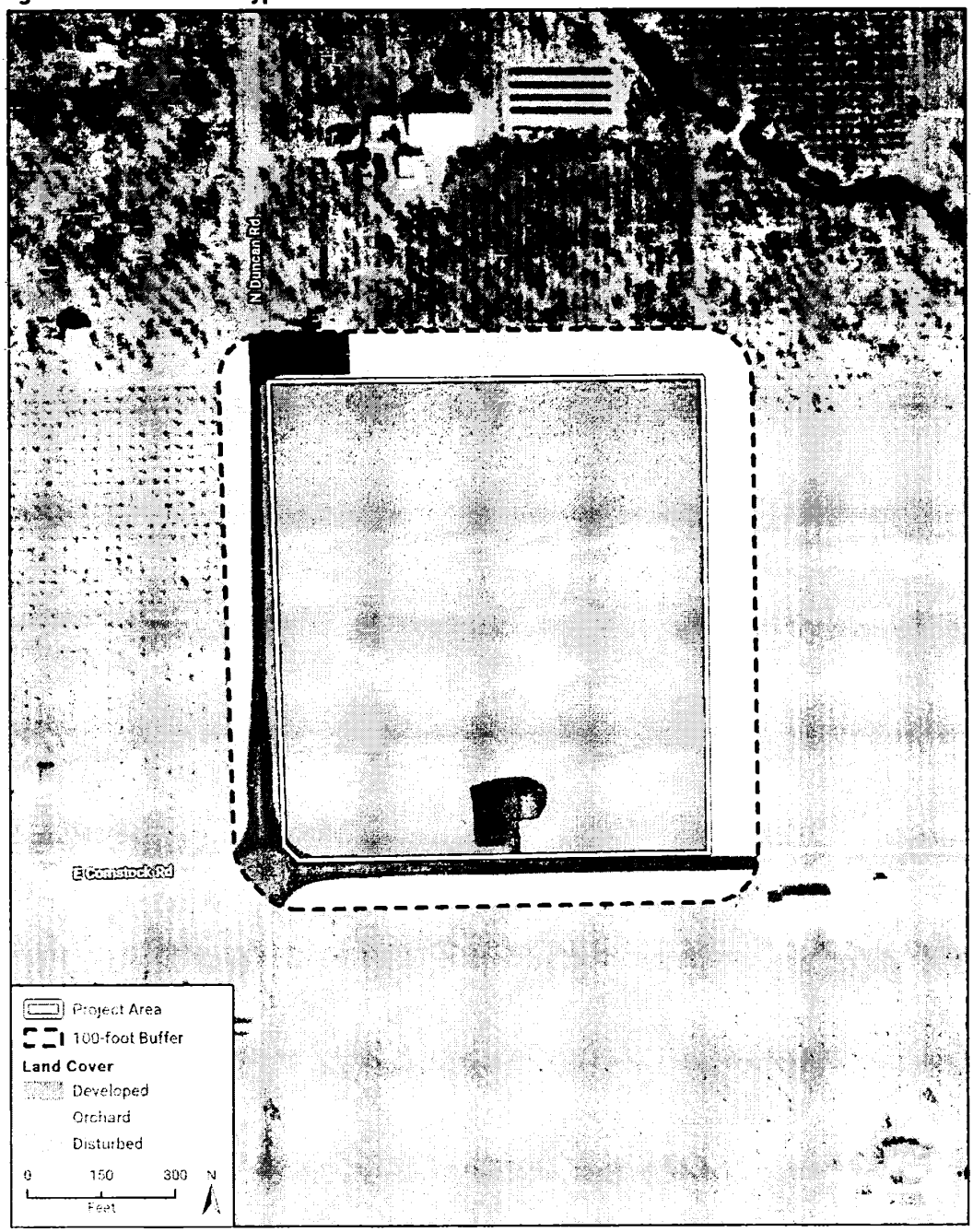
Soil data provided by SDA/SSO Downloader, NRCS, USDA, 2026

Figure 4 Land Cover Types



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Regulatory Framework

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, state, and local levels. A number of federal and state statutes provide a regulatory structure that guides the protection of biological resources. Agencies with the responsibility for protection of biological resources within the project site include the following:

- United States Army Corps of Engineers (USACE; wetlands and other waters of the United States)
- United States Fish and Wildlife Service (USFWS; federally listed species and migratory birds)
- National Marine Fisheries Service (NMFS; marine wildlife and anadromous fishes)
- Regional Water Quality Control Board (RWQCB; waters of the State)
- California Department Fish and Wildlife (CDFW; riparian areas, streambeds, and lakes; state-listed species; nesting birds, marine resources)
- California Coastal Commission (CCC)

United States Army Corps of Engineers

USACE is responsible for administering several federal programs related to ensuring the quality and navigability of the nation's waters.

Clean Water Act Section 404

Congress enacted the Clean Water Act (CWA) "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the law was significantly reorganized and expanded in 1972. "Clean Water Act" became the law's common name with amendments in 1972.

Section 404 of the CWA establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Section 404 of the CWA authorizes the Secretary of the Army, acting through the USACE, to issue permits regulating the discharge of dredged or fill materials into the "navigable waters at specified disposal sites." Section 404 requires that a permit be issued before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from regulation under Section 404 (e.g., certain farming and forestry activities).

Waters of the United States

USACE and the United States Environmental Protection Agency (USEPA) have undertaken several efforts to modernize their regulations defining "waters of the United States" (e.g., the 2015 Clean Water Rule and 2020 Navigable Waters Protection Rule), but these efforts have been frustrated by legal challenges which have invalidated the updated regulations. As a result of the Supreme Court ruling in *Sackett v. Environmental Protection Agency*, USEPA and USACE issued a final rule that amends the "Revised Definition of 'Waters of the United States'" to conform key aspects of the regulatory text to the United States Supreme Court's decision (88 Federal Register 61964–61969, September 8, 2023).

Under the "Revised Definition of 'Waters of the United States'; Conforming" rule, the term "waters of the United States" is defined as follows (33 Code of Federal Regulations [CFR] 328.3[a]):

(1) Waters which are:
   (i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
   (ii) The territorial seas; or
   (iii) Interstate waters;

(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;

(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

(4) Wetlands adjacent to the following waters:
   (i) Waters identified in paragraph (a)(1) of this section; or
   (ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

In addition, the amended regulations include eight types of excluded waters (33 CFR 328.3[b]) which are not "waters of the United States" even where they otherwise meet the terms of paragraphs (a)(2) through (5) of this section:

(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;

(2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;

(3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;

(4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;

(5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;

(6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;

(7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and

(8) Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

The lateral limits of USACE jurisdiction in non-tidal waters is defined by the "ordinary high-water mark" (OHWM) unless adjacent wetlands are present. The OHWM is a line on the shore or edge of a channel established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed upon the bank, shelving, changes in the character of soil, destruction of vegetation, or the presence of debris (33 CFR 328.3[e]). As such, waters are recognized in the field by the presence of a defined watercourse with appropriate physical and topographic features. If wetlands occur within, or adjacent to, waters of the United States, the lateral limits of USACE jurisdiction extend beyond the OHWM to the outer edge of the wetlands (33 CFR 328.4 [c]). The upstream limit of jurisdiction in the absence of adjacent wetlands is the point beyond which the OHWM is no longer perceptible (33 CFR 328.4; see also 51 Federal Register 41217).

Wetlands

USACE defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3). Indicators of three wetland parameters (hydric soils, hydrophytic vegetation, and wetlands hydrology), as determined by site investigation, must be present at a site for USACE to classify the site as a wetland (Environmental Laboratory 1987).

Limitations on Jurisdiction based on *Sackett v. Environmental Protection Agency* Supreme Court Decision

On May 25, 2023, the Supreme Court issued its decision on the petition from the Sacketts, a family in Idaho that was subject to a compliance order from the USEPA for backfilling their lot near Priest Lake, which the USEPA claimed contained federally regulated wetlands. The wetlands in question were adjacent to a ditch that fed a creek that ultimately drained into Priest Lake, a navigable water body. The USEPA asserted that the Sacketts had violated the law by filling the wetlands on their property without a permit. The Court's decision addressed controversy over whether, and under what conditions, the CWA reaches navigable waters' tributaries or adjacent wetlands. The Supreme Court's decision in Sackett provides definitive guidance to the agencies in determining the limits of their CWA authority. Major tenets of the decision have been incorporated into the agencies' current regulations through the September 2023 Conforming Rule.

The Court decided:

- "Adjacent wetlands" are WOTUS only if there is a continuous surface connection between the wetland and a navigable or relatively permanent water body, such that it is difficult to determine the boundary between the wetland and the water body. The opinion notes that "temporary interruptions to surface connection may sometimes occur because of phenomena like low tides or dry spells." The agencies addressed this element by defining the term "adjacent" to mean "having a continuous surface connection" in the Conforming Rule.
- The Significant Nexus Standard, introduced by the Court in prior decisions, is not mentioned in the Clean Water Act and should not be used. The Court determined that the standard applies ecological factors whose use in determining jurisdiction is not supported by the statute. The Conforming Rule removed significant nexus considerations from the definition.
- Although jurisdiction over tributaries was not addressed by the Court, the decision stated that "...the [Clean Water Act's] use of "waters" encompasses only those relatively permanent, standing or continuously flowing bodies of water forming geographical features that are described in ordinary parlance as streams, oceans, rivers, and lakes." The Conforming Rule makes clear that only relatively permanent tributaries qualify as "waters of the United States."

Rivers and Harbors Act Section 10

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the USACE for the construction of any structure in or over any navigable water of the United States. Structures or work outside the limits defined for navigable waters of the United States require a Section 10 permit if the structure or work affects the course, location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, re-channelization, or any other modification of a navigable water of the United States and applies to all structures and work. It further includes, without limitation, any wharf, dolphin, weir, boom breakwater, jetty, groin, bank protection (e.g., riprap, revetment, bulkhead), mooring structures such as pilings, aerial or subaqueous power transmission lines, intake or outfall pipes, permanently moored floating vessel, tunnel, artificial canal, boat ramp, aids to navigation, and any other permanent, or semi-permanent obstacle or obstruction. It is important to note that Section 10 applies only to navigable waters and thus does not apply to work in non-navigable wetlands or tributaries. In some cases, Section 10 authorization is issued by the USACE concurrently with CWA Section 404 authorization, such as when certain Nationwide Permits are used.

Coastal Zone Management Act of 1972

The Coastal Zone Management Act of 1972 (16 United States Code [USC] 1451 et seq.), administered by the National Oceanic and Atmospheric Administration, provides for the management of the nation's coastal resources, including the Great Lakes. The goal is to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone." Each federal agency activity within or outside of the coastal zone that affects any land or water use or natural resources of the coastal zone must be carried out in a manner consistent to the maximum extent practicable with the enforceable policies of the approved state management programs. The policies of the California Coastal Act of 1976 (Coastal Act) govern the types of developments and uses allowed within wetlands and other waters within the Coastal Zone, including open coastal waters. Along the Pacific coast, open coastal waters extend from the mean high-water line to the state's outer limit of jurisdiction, approximately 3 miles offshore.

Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and nine RWQCBs have jurisdiction over "waters of the State," which are defined as any surface water or groundwater, including saline waters, within the boundaries of the state (California Water Code sec. 13050[e]). These agencies also have responsibilities for administering portions of the CWA.

Clean Water Act Section 401

Section 401 of the CWA requires an applicant requesting a federal license or permit for an activity that may result in any discharge into navigable waters (such as a Section 404 Permit) to provide state certification that the proposed activity will not violate state and federal water quality standards. In California, CWA Section 401 Water Quality Certification (Section 401 Certification) is issued by the RWQCBs and by the SWRCB for multi-region projects. The process begins when an applicant submits an application to the RWQCB and informs the USACE (or the applicable agency from which a license or permit was requested) that an application has been submitted. The USACE will then determine a "reasonable period of time" for the RWQCB to act on the application; this is typically 60 days for routine projects and longer for complex projects but may not exceed one year. When the period has elapsed, if the RWQCB has not either issued or denied the application for Section 401 Certification, the USACE may determine that Certification has been waived and issue the requested permit. If a Section 401

Certification is issued it may include binding conditions, imposed either through the Certification itself or through the requested federal license or permit.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 et seq.), the policy of the State is as follows:

- The quality of all the waters of the State shall be protected
- All activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason
- The State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation

The Porter-Cologne Act established nine RWQCBs (based on watershed boundaries) and the SWRCB, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The SWRCB provides program guidance and oversight, allocates funds, and reviews RWQCB decisions. In addition, the SWRCB allocates rights to the use of surface water. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions. The SWRCB and RWQCBs have numerous nonpoint source related responsibilities, including monitoring and assessment, planning, financial assistance, and management.

Section 13260 of the Porter-Cologne Act requires any person discharging or proposing to discharge waste that could affect the quality of waters of the State to file a Report of Waste Discharge with the appropriate RWQCB. The RWQCB may then authorize the discharge, subject to conditions, by issuing Waste Discharge Requirements (WDRs). While this requirement was historically applied primarily to outfalls and similar point source discharges, the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*, effective May 2020, make it clear that the agency will apply the Porter-Cologne Act's requirements to discharges of dredge and fill material as well. The *Procedures* state that they are to be used in issuing CWA Section 401 Certifications and WDRs and largely mirror the existing review requirements for CWA Section 404 Permits and Section 401 Certifications, incorporating most elements of the USEPA's *Section 404(b)(1) Guidelines*. Following issuance of the *Procedures*, the SWRCB produced a consolidated application form for dredge/fill discharges that can be used to obtain a CWA Section 401 Water Quality Certification, WDRs, or both.

Non-Wetland Waters of the State

The SWRCB and RWQCBs have not established regulations for field determinations of waters of the state except for wetlands currently. In many cases the RWQCBs interpret the limits of waters of the State to be bounded by the OHWM unless isolated conditions or ephemeral waters are present. However, in the absence of statewide guidance each RWQCB may interpret jurisdictional boundaries within their region and the SWRCB has encouraged applicants to confirm jurisdictional limits with their RWQCB before submitting applications. As determined by the RWQCB, waters of the State may include riparian areas or other locations outside the OHWM, leading to a larger jurisdictional area over a given water body compared to the USACE.

Wetland Waters of the State

Procedures for defining wetland waters of the State pursuant to the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* went into effect May 28, 2020. The SWRCB defines an area as wetland if, under normal circumstances:

(i) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;
(ii) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and
(iii) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The SWRCB's *Implementation Guidance for the Wetland Definition and Procedures for Discharges of Dredge and Fill Material to Waters of the State* (2020), states that waters of the United States and waters of the State should be delineated using the standard USACE delineation procedures, taking into consideration that the methods shall be modified only to allow for the fact that a lack of vegetation does not preclude an area from meeting the definition of a wetland.

California Coastal Act of 1976

The Coastal Act (Public Resources Code Section 30000 et seq.) was enacted to establish policies and guidelines that provide direction for the conservation and development of the California coastline. The Coastal Act established the CCC and created a state and local government partnership to ensure that public concerns regarding coastal development are addressed. Some of the basic goals of this program are to protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources; maximize public access to and public recreational opportunities along the coast; and ensure priority for coastal-dependent and coastal-related development over other development on the coast.

The CCC serves as the coastal management and regulatory agency with jurisdiction over the Coastal Zone (Public Resources Code Section 30103). The California Coastal Zone generally extends seaward 3 miles and inland anywhere from 0.5 mile to 5 miles. The CCC is responsible for assisting in the preparation, review, and certification of Local Coastal Programs/Local Coastal Plans, which are developed by municipalities for that portion of their jurisdiction that falls within the Coastal Zone. Once the Local Coastal Program/Local Coastal Plan has been certified, regulatory responsibility is delegated to the local jurisdiction, although the CCC retains jurisdiction over the immediate shoreline.

United States Fish and Wildlife Service

USFWS implements several laws protecting the Nation's fish and wildlife resources, including the federal Endangered Species Act (ESA; 16 USC Sections 153 et seq.), the Migratory Bird Treaty Act (MBTA; 16 USC Sections 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668).

Endangered Species Act

USFWS and NMFS share responsibility for implementing the federal ESA. Generally, the USFWS implements the federal ESA for terrestrial and freshwater species, while the NMFS implements the federal ESA for marine and anadromous species. Projects that would result in "take" of any threatened or endangered wildlife species, or a threatened or endangered plant species if occurring on federal land, are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of the federal ESA, depending on the involvement by the federal government in funding, authorizing, or carrying out the project. The permitting

process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. "Take" under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of the federal ESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

Migratory Bird Treaty Act

The MBTA of 1918 implements four international conservation treaties that the United States entered into with Canada in 1916, Mexico in 1936, Japan in 1972, and Russia in 1976. It is intended to ensure the sustainability of populations of all protected migratory bird species. The law has been amended with the signing of each treaty, as well as when any of the treaties were amended, such as with Mexico in 1976 and Canada in 1995. The MBTA prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS.

The list of migratory bird species protected by the law, in regulations at 50 CFR Part 10.13, is primarily based on bird families and species included in the four international treaties. A migratory bird species is included on the list if it meets one or more of the following criteria:

1. It occurs in the United States or U.S. territories as the result of natural biological or ecological processes and is currently, or was previously listed as, a species or part of a family protected by one of the four international treaties or their amendments.
2. Revised taxonomy results in it being newly split from a species that was previously on the list, and the new species occurs in the United States or U.S. territories as the result of natural biological or ecological processes.
3. New evidence exists for its natural occurrence in the United States or U.S. territories resulting from natural distributional changes and the species occurs in a protected family.

In 2004, the Migratory Bird Treaty Reform Act limited the scope of the MBTA by stating the MBTA applies only to migratory bird species that are native to the United States or U.S. territories, and that a native migratory bird species is one that is present as a result of natural biological or ecological processes. The Migratory Bird Treaty Reform Act requires the USFWS to publish a list of all nonnative, human-introduced bird species to which the MBTA does not apply, and an updated list was published in 2020. The 2020 update identifies species belonging to biological families referred to in treaties the MBTA implements but are not protected because their presence in the United States or U.S. territories is solely the result of intentional or unintentional human-assisted introductions.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act prohibits anyone, without a permit issued by the USFWS, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

"Disturb" means "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

California Department of Fish and Wildlife

CDFW derives its authority from the Fish and Game Code of California and administers several State laws protecting fish and wildlife resources and the habitats upon which they depend.

California Endangered Species Act

The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et. seq.) prohibits take of state listed threatened or endangered. Take under CESA is defined as "Hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (Fish and Game Code sec. 86). This definition does not prohibit indirect harm by way of habitat modification, except where such harm is the proximate cause of death of a listed species. Where incidental take would occur during construction or other lawful activities, CESA allows the CDFW to issue an Incidental Take Permit upon finding, among other requirements, that impacts to the species have been minimized and fully mitigated. Unlike the federal ESA, CESA's protections extend to candidate species during the period (typically one year) while the California Fish and Game Commission decides whether the species warrants CESA listing.

Native Plant Protection Act

CDFW also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 et seq.). NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare, and prohibits the take of listed plant species. Effective in 2015, CDFW promulgated regulations (14 California Code of Regulations [CCR] 786.9) under the authority of the NPPA, establishing that the CESA's permitting procedures would be applied to plants listed under the NPPA as "Rare." With this change, there is little practical difference for the regulated public between plants listed under CESA and those listed under the NPPA.

Fully Protected Species Laws

CDFW enforces Sections 3511, 4700, 5050, and 5515 of the Fish and Game Code, which prohibit take of species designated as Fully Protected. CDFW is not allowed to issue an Incidental Take Permit for Fully Protected species; therefore, impacts to these species must be avoided. The exception is situations where a Natural Community Conservation Plan is in place that authorizes take of the fully protected species.

Avian Protection Laws

California Fish and Game Code sections 3503, 3503.5, and 3513 describe unlawful take, possession, or destruction of native birds, nests, and eggs. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Section 3513 makes it a state-level offense to take any bird in violation of the federal MBTA.

Protection of Lakes and Streambeds

California Fish and Game Code section 1602 states that it is unlawful for any person to "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or

bank of, any river, stream, or lake" without first notifying the CDFW of that activity. Thereafter, if CDFW determines and informs the entity that the activity will not substantially adversely affect any existing fish or wildlife resources, the entity may commence the activity. If, however, California Department of Fish and Game determines that the activity may substantially adversely affect an existing fish or wildlife resource, the entity may be required to obtain from CDFW a Streambed Alteration Agreement (SAA), which will include reasonable measures necessary to protect the affected resource(s), before the entity may conduct the activity described in the notification. Upon receiving a complete Notification of Lake/Streambed Alteration, CDFW has 60 days to present the entity with a Draft SAA. Upon review of the Draft SAA by the applicant, any problematic terms are negotiated with CDFW and a final SAA is executed.

The CDFW has not defined the term "stream" for the purposes of implementing its regulatory program under Section 1602, and the agency has not promulgated regulations directing how jurisdictional streambeds may be identified, or how their limits should be delineated. However, four relevant sources of information offer insight as to the appropriate limits of CDFW jurisdiction as discussed below.

- The plain language of Section 1602 of California Fish and Game Code establishes the following general concepts:
  - References "river," "stream," and "lake"
  - References "natural flow"
  - References "bed," "bank," and "channel"
- Applicable court decisions, in particular *Rutherford v. State of California* (188 Cal App. 3d 1276 [1987]), which interpreted Section 1602's use of "stream" to be as defined in common law. The Court indicated that a "stream" is commonly understood to:
  - Have a source and a terminus
  - Have banks and a channel
  - Convey flow at least periodically, but need not flow continuously and may at times appear outwardly dry
  - Represent the depression between the banks worn by the regular and usual flow of the water
  - Include the area between the opposing banks measured from the foot of the banks from the top of the water at its ordinary stage, including intervening sand bars
  - Include the land that is covered by the water in its ordinary low stage
  - Include lands below the OHWM
- CDFW regulations defining "stream" for other purposes, including sport fishing (14 CCR 1.72) and streambed alterations associated with cannabis production (14 CCR 722[c][21]), which indicate that a stream:
  - Flows at least periodically or intermittently
  - Flows through a bed or channel having banks
  - Supports fish or aquatic life
  - Can be dry for a period of time
  - Includes watercourses where surface or subsurface flow supports or has supported riparian vegetation
- Guidance documents, including *A Field Guide to Lake and Streambed Alteration Agreements* (California Department of Fish and Game 1994) and *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* (Brady and Vyverberg 2013), which suggest the following:
  - A stream may flow perennially or episodically

- A stream is defined by the course in which water currently flows, or has flowed during the historic hydrologic course regime (approximately the last 200 years)
- Width of a stream course can reasonably be identified by physical or biological indicators
- A stream may have one or more channels (single thread vs. compound form)
- Features such as braided channels, low-flow channels, active channels, banks associated with secondary channels, floodplains, islands, and stream-associated vegetation, are interconnected parts of the watercourse
- Canals, aqueducts, irrigation ditches, and other means of water conveyance can be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife
- Biologic components of a stream may include aquatic and riparian vegetation, all aquatic wildlife including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system
- The lateral extent of a stream can be measured in different ways depending on the particular situation and the type of fish or wildlife resource at risk

The tenets listed above, among others, are applied to establish the boundaries of streambeds in various environments. Importance of each factor may be weighted based on site-specific considerations and the applicability of the indicators to the streambed at hand.

San Joaquin Multi-Species Habitat Conservation and Open Space Plan

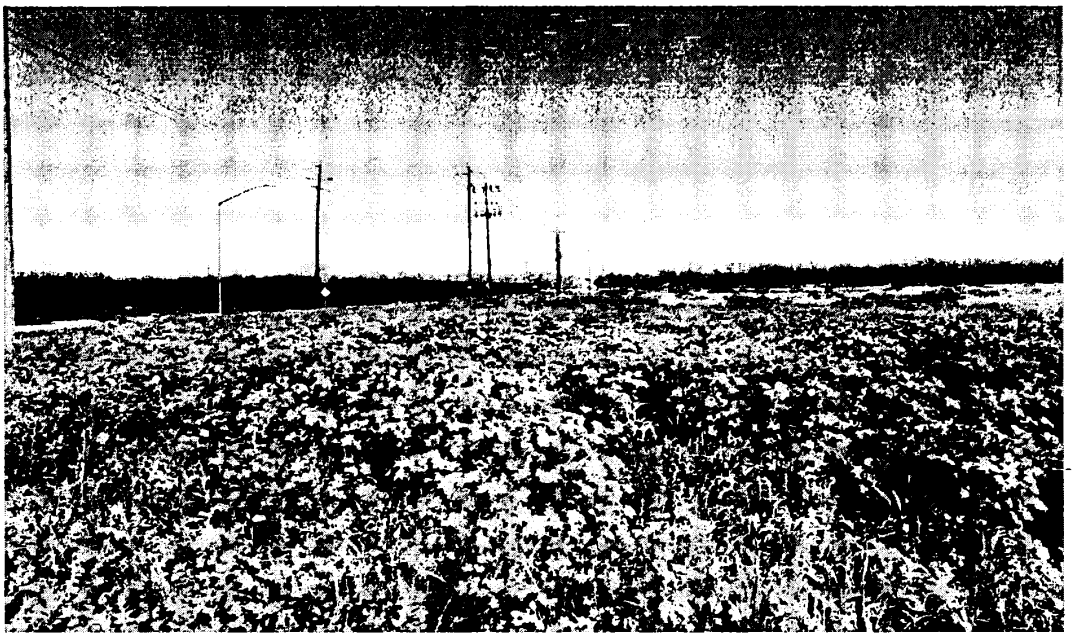
The San Joaquin County Multi Species Habitat Conservation Plan and Open Space Plan (SJMSCP) is a comprehensive conservation planning process that addresses the needs of multiple plant and animal species while protecting the region's agricultural interests as the population increases over a period of 50 years (2001–2051) (SJMSCP 2000). The SJMSCP, in accordance with ESA Section 10(a)(1)(B) and CESA Section 2081(b) offers compensation for the Conversion of Open Space to non-Open Space which affect one or more of the 97 species covered under the SJMSCP (Covered Species) (SJMSCP 2000).

The project area is mapped as the Multi-Purpose Open Space (C2) habitat type per the SJMSCP and is also located in the SJMSCP's Central Zone, which provides incidental take coverage for several Covered Species. If a project proponent opts into the SJMSCP, permit conditions would require avoidance and minimization measures to offset impacts to Covered Species.

For all project activities subject to the SJMSCP and seeking coverage under the SJMSCP, the project proponent must submit an applicant checklist and review form to the San Joaquin Council of Governments to establish eligibility for coverage. The form details the activities not subject to the SJMSHCP and those that may have the potential to impact a biological resource covered by the SJMSHCP. Project applicants have four options to receive coverage, with approval by the San Joaquin Council of Governments:

1. Pay the appropriate fee. A fee is assessed depending on which of the four habitats the project lies within.
2. Dedicate habitat lands as conservation easement or fee title.
3. Purchase mitigation bank credits from a mitigation bank approved by SJMSCP.
4. Propose an alternative mitigation plan, consistent with the goals of the SJMSCP and equivalent in biological value.

The applicant intends to participate in the SJMSCP and pay the appropriate fee.



Photograph 1. View of project area from northern project boundary, facing south. March 4, 2026.

Photograph 2. Representative view of dense vegetation present throughout entire project area. March 4, 2026.

Photograph 3. View of project area facing south from northern project boundary. March 4, 2026.

Photograph 4. View of project area from eastern project boundary, facing north. March 4, 2026.

Special-Status Plant Species in the Two-Mile/Nine-Quad Search Radius of the Project Area

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Arctostaphylos myrtifolia Ione manzanita	FT/None G1/S1 1B.2	Perennial evergreen shrub. Chaparral, cismontane woodland. On Ione clay with chaparral associates. Often comprises 50-80% cover. Elevations: 195-1,905 feet. Blooms Nov-Mar.	Not Expected	Suitable chaparral habitat is not present within the project area.
Calycadenia hooveri Hoover's calycadenia	None/None G2/S2 1B.3	Annual herb. Cismontane woodland, valley and foothill grassland. Rocky soils. Elevations: 215-985 feet. Blooms Jul-Sep.	Not Expected	Suitable rocky soils are not present within the project area. The project area is below the known elevation range for this species.
Calycadenia spicata spicate calycadenia	None/None G3?/S3 1B.3	Cismontane woodland, valley and foothill grassland. Has preferences for areas with adobe, clay, disturbed areas, dry, gravelly, openings, roadsides, or rocky. Elevation: 130-4,595 feet. Blooms May-Sep.	Not Expected	Suitable woodland and grassland habitat is not present within the project area. Roadsides adjacent to the project area are overgrown with ruderal vegetation or associated with managed orchards.
Castilleja campestris var. *succulenta* succulent owl's-clover	FT/SE G4?T2T3/S2S3 1B.2	Annual herb (hemiparasitic). Vernal pools. Moist places, often in acidic soils. Elevations: 165-2,460 feet. Blooms Mar-May.	Not Expected	Suitable vernal pool habitat is not present within the project area.
Delphinium recurvatum recurved larkspur	None/None G2?/S2 1B.2	Perennial herb. Chenopod scrub, cismontane woodland, valley and foothill grassland. Alkaline soils. Elevations: 10-2,590 feet. Blooms Mar-Jun.	Not Expected	Suitable woodland and grassland habitat is not present within the project area.
Eryngium pinnatisectum Tuolumne button-celery	None/None G2/S2 1B.2	Annual/perennial herb. Cismontane woodland, lower montane coniferous forest, vernal pools. Volcanic soils; vernal pools and mesic sites within other natural communities. Elevations: 230-3,000 feet. Blooms May-Aug.	Not Expected	Suitable volcanic vernal pool habitat is not present within the project area. The project area is below the known elevation range for this species.
Eryngium racemosum Delta button-celery	None/SE G1/S1 1B.1	Annual/perennial herb. Riparian scrub. Seasonally inundated floodplain on clay. Elevations: 10-100 feet. Blooms May-Oct.	Not Expected	Suitable riparian scrub habitat is not present within the project area.
Horkelia parryi Parry's horkelia	None/None G2/S2 1B.2	Perennial herb. Chaparral, cismontane woodland. Openings in chaparral or woodland; especially known from the Ione formation in Amador County. Elevations: 260-3,510 feet. Blooms Apr-Sep.	Not Expected	Suitable chaparral and woodland habitat is not present within the project area. The project area is below

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
				the known elevation range for this species.
Juncus leiospermus var. *ahartii* Ahart's dwarf rush	None/None G2T1/S1 1B.2	Annual herb. Valley and foothill grassland. Restricted to the edges of vernal pools in grassland. Elevations: 100-750 feet. Blooms Mar-May.	Not Expected	Suitable vernal pool grassland habitat is not present within the project area.
Legenere limosa legenere	None/None G2/S2 1B.1	Annual herb. Vernal pools. In beds of vernal pools. Elevations: 5-2,885 feet. Blooms Apr-Jun.	Not Expected	Suitable vernal pool habitat for this species is not present within the project area.
Navarretia myersii ssp. *myersii* pincushion navarretia	None/None G2T2/S2 1B.1	Annual herb. Vernal pools. Clay soils within non-native grassland. Elevations: 65-1,085 feet. Blooms Apr-May.	Not Expected	Suitable vernal pool habitat is not present within the project area.
Navarretia paradoxiclara Patterson's navarretia	None/None G2/S2 1B.3	Annual herb. Meadows and seeps. Serpentinite, openings, vernally mesic, often drainages. Elevations: 490-1,410 feet. Blooms May-Jul.	Not Expected	Suitable mesic habitat is not present within the project area. The project area is below the known elevation range for this species.
Sagittaria sanfordii Sanford's arrowhead	None/None G3/S3 1B.2	Perennial rhizomatous herb (emergent). Marshes and swamps. In standing or slow-moving freshwater ponds, marshes, and ditches. Elevations: 0-2,135 feet. Blooms May-Nov.	Not Expected	Suitable marsh habitat is not present within the project area.
Tuctoria greenei Greene's tuctoria	FE/SR G1/S1 1B.1	Annual herb. Vernal pools. Vernal pools in open grasslands. Elevations: 100-3,510 feet. Blooms May-Sep.	Not Expected	Suitable vernal pool habitat is not present within the project area.

Status (Federal/State)
FE = Federal Endangered
FT = Federal Threatened
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered

CRPR (CNPS California Rare Plant Rank)
1A = Presumed extirpated in California, and rare or extinct elsewhere
1B = Rare, Threatened, or Endangered in California and elsewhere
2A = Presumed extirpated in California, but common elsewhere
2B= Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension
.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)
.2 = Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)
.3 = Not very endangered in California (<20% of occurrences threatened/low degree and immediacy of threat)

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
SCT = State Candidate Threatened		**Other Statuses**		
SR = State Rare		G1 or S1 Critically Imperiled Globally or Subnationally (state)		
SSC = CDFW Species of Special Concern		G2 or S2 Imperiled Globally or Subnationally (state)		
FP = CDFW Fully Protected		G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)		
WL = CDFW Watch List		G4/5 or S4/5 Apparently secure, common and abundant		
		GH or SH Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery		
		Additional notations may be provided as follows		
		T – Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)		
		Q – Questionable taxonomy that may reduce conservation priority		
		? – Inexact numeric rank		

Attachment 5

Special-Status Wildlife Species with Potential to Occur

Special-Status Wildlife Species in the Two-Mile/Nine-Quad Search Radius of the Project Area

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Invertebrates				
Crotch's bumble bee *Bombus crotchii*	None/SCE G2/S2	Crotch's bumble bee habitat requirements include availability of suitable colony nesting sites, floral resources to obtain nectar and pollen throughout the duration of the colony period (spring, summer and fall), and suitable overwintering sites for queens. Most bumble bees are primitively eusocial insects that live in colonies composed of a queen, workers, and, near the end of the season, reproductive members of the colony (new queens, or gynes, and males). Nest sites typically include underground cavities, wood or rock piles, brush piles, and other cavities on open west-southwest slopes bordered by trees. Little is known about hibernacula or overwintering sites.	Moderate	Suitable floral resources and potential nesting sites are present within the project area. While there are no documented CNDDB occurrences within the nine-quad search, the project area is within the current range for this species. The nearest documented occurrence in Bumble Bee Watch is approximately 23 miles northeast of the project area (Xerces Society 2026).
Branchinecta conservatio conservancy fairy shrimp	FE/None G2/S2	Endemic to the grasslands of the norther two-thirds of the Central Valley. Inhabits astatic pools located in swales formed by old, braided alluvium filled by winter/spring rains with standing water lasting until June.	Not Expected	Suitable vernal pool habitat is not present within the project area.
Branchinecta lynchi vernal pool fairy shrimp	FT/None G3/S3	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Not Expected	Suitable vernal pool habitat is not present within the project area.
Danaus plexippus plexippus monarch - California overwintering population	FPT/None G4T1T2Q/S2	Monarch adults make massive, multi-generation migrations from spring to fall, flying thousands of miles to breed and 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	Not Expected	Suitable milkweed host plants were not observed during the field survey when they would have been evident and identifiable. Additionally, monarchs are only known to overwinter along the coast of California.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
		(*Asclepias* sp.); caterpillars eat flowers and leaves. Overwintering sites along the California coast are important for conservation of this species and roosts are located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.		
Desmocerus californicus dimorphus valley elderberry longhorn beetle	FT/None G3T3/S3	Occurs only in the Central Valley of California, in association with blue elderberry (Sambucus mexicana). Prefers to lay eggs in elderberries 2 to 8 inches in diameter; some preference shown for "stressed" elderberries.	Not Expected	Suitable elderberry host plants were not observed during the field survey.
Lepidurus packardi vernal pool tadpole shrimp	FE/None G3/S3	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	Not Expected	Suitable vernal pool habitat is not present within the project area.
Fish				
Mylopharodon conocephalus hardhead	None/None G3/S3 SSC	Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Also present in the Russian River. Clear, deep pools with sand-gravel-boulder bottoms and slow water velocity. Not found where exotic centrarchids predominate.	Not Expected	Suitable aquatic habitat is not present within the project area.
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	FT/None G5T2Q/S2 SSC	Populations in the Sacramento and San Joaquin rivers and their tributaries.	Not Expected	Suitable aquatic habitat is not present within the project area.
Amphibians				
Ambystoma californiense pop. 1 California tiger salamander - central California DPS	FT/ST G3T3/S3 WL	Lives in vacant or mammal-occupied burrows throughout most of the year; in grassland, savanna, or open woodland habitats. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Not Expected	Suitable aquatic and upland habitat is not present within the project area.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Spea hammondii western spadefoot	FPT/None G2G3/S3S4 SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	Not Expected	Suitable aquatic and upland habitat is not present within the project area.
Reptiles				
Actinemys marmorata northwestern pond turtle	FPT/None G2/SNR SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, and basking sites below 6,000 feet elevation. Typically nests on sandy banks or grassy open fields within 330 feet of water; but has been observed nesting up to 1,640 feet from water.	Not Expected	Suitable aquatic and upland habitat is not present within the project area.
Thamnophis gigas giant gartersnake	FT/ST G2/S2	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the gartersnakes in California.	Not Expected	Suitable aquatic habitat is not present within the project area.
Birds				
Agelaius tricolor tricolored blackbird	None/ST G3/S2 SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a mile of the colony.	Not Expected	Suitable open water habitat with dense vegetation is not present within the project area.
Athene cunicularia burrowing owl	None/SCE G4/S2 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Low	Suitable burrows are not present within the project area and foraging habitat is limited. The nearest documented occurrences are approximately 10 miles northwest and southeast of the project area from 1999 and 1987.
Buteo swainsoni Swainson's hawk	None/ST G5/S4	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Moderate	Suitable foraging habitat is limited within the project area. However, suitable nesting trees are present in the vicinity of the project area. There are 6 documented occurrences of this species within five miles of the project area (CNDDB 2026).

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Icteria virens yellow-breasted chat	None/None G5/S4 SSC	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 feet of ground.	Not Expected	Suitable riparian habitat is not present within the project area.
Riparia riparia bank swallow	None/ST G5/S3	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, and ocean to dig nesting hole.	Not Expected	Suitable vertical banks near aquatic features are not present within the project area.
Setophaga petechia yellow warbler	None/None G5/S3 SSC	Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	Not Expected	Suitable riparian habitat is not present within the project area.
Mammals				
Antrozous pallidus pallid bat	None/None G4/S3 SSC	Found in a variety of habitats including deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts in crevices of rock outcrops, caves, mine tunnels, buildings, bridges, and hollows of live and dead trees which must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Not Expected	Suitable foraging and roosting habitat is not present within the project area.

Status (Federal/State)

FE = Federal Endangered
FT = Federal Threatened
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FD = Federal Delisted
FC = Federal Candidate
SE = State Endangered
ST = State Threatened

Other Statuses

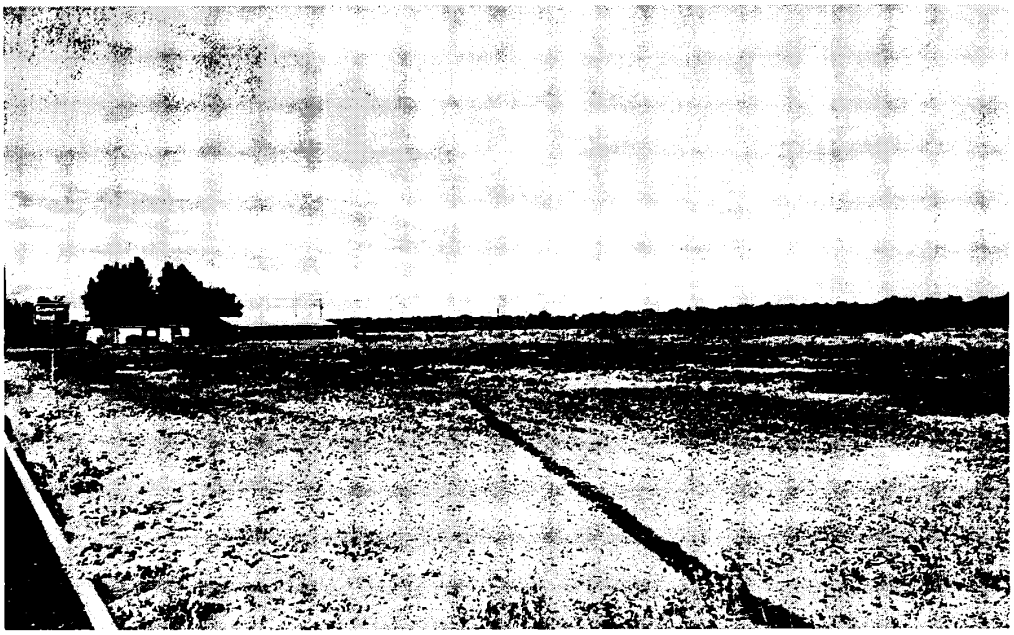
G1 or S1 Critically Imperiled Globally or Subnationally (state)
G2 or S2 Imperiled Globally or Subnationally (state)
G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)
G4/5 or S4/5 Apparently secure, common and abundant
GH or SH Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery

Additional notations may be provided as follows

T – Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)
Q – Questionable taxonomy that may reduce conservation priority

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale

SCE = State Candidate Endangered
SCT = State Candidate Threatened
SR = State Rare
SD = State Delisted
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List
? – Inexact numeric rank



Duncan Road Solar Development Project

Cultural Resources Technical Report

prepared for

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RINCON CONSULTANTS

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Table of Contents

Figures

Tables

Appendices

Executive Summary

Renewable Properties retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Duncan Road Solar Development Project in Linden, San Joaquin County, California (Project). Located in the unincorporated area of San Joaquin County, the Project proposes a ground-mounted solar photovoltaic (PV) energy facility and will be located on approximately 14.5 acres of an overall 19.5-acre tract of land (San Joaquin County Accessor's Parcel Number 091-170-060). The Project abuts Duncan Road to the west and East Comstock Road to the south. The Project may utilize United States Department of Agriculture (USDA) funding and therefore would be subject to Section 106 of the National Historic Preservation Act (Section 106) with the USDA acting as the federal lead agency. The Project is also subject to the California Environmental Quality Act (CEQA) with San Joaquin County (County) acting as the lead agency under CEQA. This cultural resources study was prepared to support compliance with Section 106 and CEQA and includes the methods and results of a cultural resources records search, field survey, Native American Heritage Commission Sacred Lands File Search, interested parties outreach, field survey, geoarchaeological review and sensitivity assessment, and National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) evaluation of one property.

One single-family agricultural property located at 18133 East Comstock Road was evaluated and recommended ineligible for listing in the NRHP and the CRHR due to a lack of historic significance. The property is not considered a historic property as defined by 36 CFR 800.16(l)(1) or a historical resource as defined by CEQA Section 15064.5(a).

This study did not identify any archaeological resources or archaeological deposits within the APE. The records search and field survey were negative for archaeological resources. However, background and archival research indicates that the project site has high sensitivity for pre-contact subsurface archaeological deposits and moderate sensitivity for post-contact subsurface archaeological deposits. As a result, to comply with CEQA, Rincon recommends a Worker's Environmental Awareness Program, archaeological monitoring, and unanticipated discoveries protocol during construction; if compliance with Section 106 of the NHPA is required, additional archaeological identification may be required by the USDA.

Based on the information summarized above, Rincon recommends a finding of ***no historic properties affected*** with minimization measures for the undertaking under Section 106 of the NHPA. In the event of a post review discovery during ground disturbance associated with the undertaking, the procedures under 36 CFR Part 800.13 should be followed by the lead federal agency.

Under CEQA, Rincon recommends a finding of ***no impact to historical resources*** and ***less than significant impact with mitigation incorporated for archaeological resources***. Rincon has recommended measures in the unlikely event of an unanticipated discovery during construction. Lastly, with adherence to existing regulations such as Health and Safety Code Section 7050.5 and PRC Section 5097.98, Rincon recommends a finding of ***less-than-significant impact to human remains***.

1 Introduction

Renewable Properties retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Duncan Road Solar Development Project in San Joaquin County, California (Project). The purpose of this technical report is to document the methods and results of a cultural resources records search, Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search, field survey, interested parties outreach, geoarchaeological review and sensitivity assessment, and National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) evaluation of one property. The Project may utilize United States Department of Agriculture (USDA) funding and, therefore, would be subject to Section 106 of the National Historic Preservation Act (Section 106) with the USDA acting as the federal lead agency. The Project is also subject to the California Environmental Quality Act (CEQA) with San Joaquin County (County) acting as the lead agency under CEQA.

1.1 Project Description

The Project is a ground-mounted solar photovoltaic (PV) energy facility and will be located on approximately 14.5 acres of an overall 19.5-acre tract of land (San Joaquin County Accessor's Parcel Number [APN] 091-170-060). The Project abuts Duncan Road to the west and East Comstock Road to the south.

The Project site is zoned General Agriculture Zone (AG-40) and the Project meets the County's definition of a Solar Energy System, which according to Chapter 9-203.020 of the San Joaquin County Ordinance Code (Ordinance Code), is an allowed use subject to a Conditional Use Permit in compliance with Chapter 9-804 of the Ordinance Code. The Project will be located on the undeveloped portion of the land and does not propose alterations or impacts to the existing structures on the parcel. RPCA Solar 11, LLC has entered into a long-term lease agreement with the property owner, The Louis and Jeanette Barbagelata 2002 Inter Vivos Revocable Trust, to facilitate the development and long-term operation of the Project.

Once constructed, the Project will generate up to 3 megawatts (MW) of clean, reliable solar energy by utilizing PV solar modules, inverters, and appurtenant electrical equipment to convert the sun's energy to usable power distributed to the electrical grid. The modules will be mounted on a steel racking system employing single-axis tracker technology that efficiently tracks the sun's movement throughout the day and maximizes the efficiency of solar collection. The rows of modules will be anchored in the ground using driven piers, and the overall height of the array is not expected to exceed 15 feet above the existing ground surface at maximum tilt. The maximum depth of ground disturbance is assumed to be 10 feet below grade to account for the footings for the PV panels. The Project will interconnect to the existing Pacific Gas and Electric electrical distribution system adjacent to the site along East Comstock Road.

The Project is located in a rural, agricultural residential area. The majority of residences in the surrounding area are naturally screened from the Project by their own agricultural uses. However, the Project includes adequate landscape screening to provide a natural vegetative buffer between the Project and the nearest adjacent residence. The buffer would be designed to incorporate native plant species requiring minimal water once they are established. As such, the project blends in with the surrounding uses.

The Project encompasses portions of Section 3 of Township 2 North, Range 8 East on the *Linden, California* United States Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1).

1.2 Area of Potential Effects

The Area of Potential Effects (APE) is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties. Determination of the APE is influenced by the project's setting, the scale and nature of the undertaking, and the different kinds of effects that may result from the undertaking (36 CFR 800.16[d]).

The APE was developed to identify resources in the area that have potential for historic significance, that should be evaluated for eligibility for the NRHP, and that may be directly or indirectly affected by the undertaking, pursuant to 36 CFR 800.16(d).

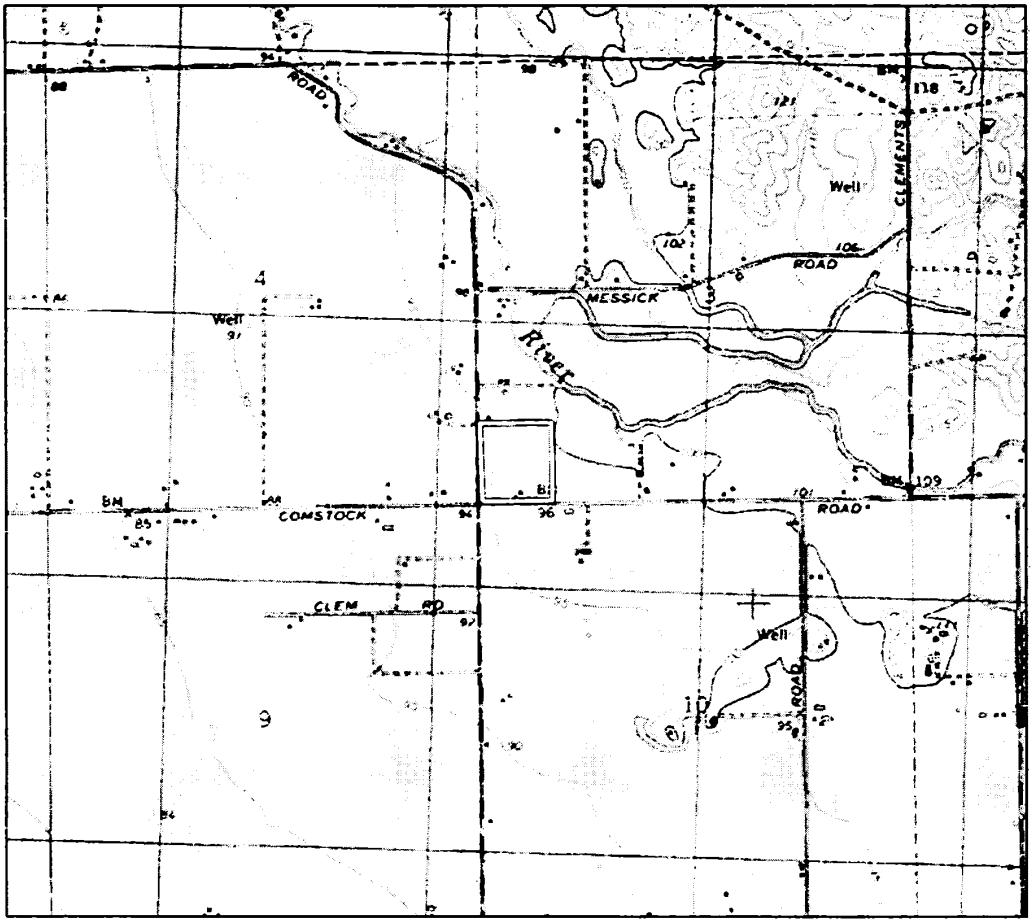
The APE is coterminous with the maximum extent of ground disturbance for the Project (Figure 2). This includes one property: 18133 East Comstock Road (APN 091-170-060) at the northeast corner of the intersection of Duncan Road and Comstock Road. The Project would construct a ground-mounted solar PV energy facility with arrays not to exceed 15 feet above the existing ground surface. An indirect APE was not established because the Project will install panels that will not be taller than the surrounding buildings and structures. There are no previously recorded historical resources adjacent to or within the surrounding area.

The APE must be considered as a three-dimensional space that includes any ground disturbance associated with construction. The belowground vertical APE is assumed to be a maximum of 10 feet below ground surface to account for the footings for the PV panels. The aboveground vertical APE is assumed to be a maximum of 15 feet aboveground surface to account for the height of the PV panels.

1.3 Personnel

Rincon Senior Supervising Archaeologist Hannah Haas, Registered Professional Archaeologist (RPA), provided management oversight for this cultural resources study and serves as the principal investigator for archaeological resources. Rincon Archaeologists Joel Rudewicz, BA, and Anthony Martin, BA, performed the cultural resources survey. Architectural Historian Michelle Anderson, MA, and Archaeologist Elaine Haynes, MA, RPA, are the primary authors of this report. Cultural Resources Principals, Margo Nayyar, MA, and Nichole Jordan, MA, RPA, reviewed this report for quality control. Ms. Haas, Ms. Anderson, Ms. Haynes, Ms. Nayyar, and Ms. Jordan meet the Secretary of the Interior's Professional Qualifications Standards in their respective fields for prehistoric and historic archaeology, history, and/or architectural history (National Park Service [NPS] 1983). Geographic Information Systems Analyst Vivian Phan prepared the figures found in this report.

Figure 1 Regional Location



Basemap provided by National Geographic Society, Esri and their licensors © 2025. Linden Quadrangle. T02N R08E S03,04. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

Project Location

0 1,000 2,000 Feet

N

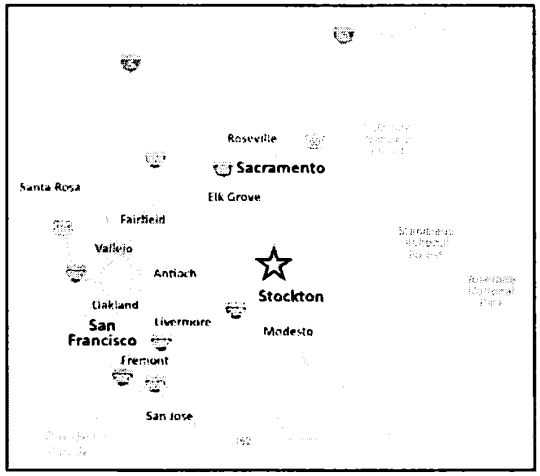
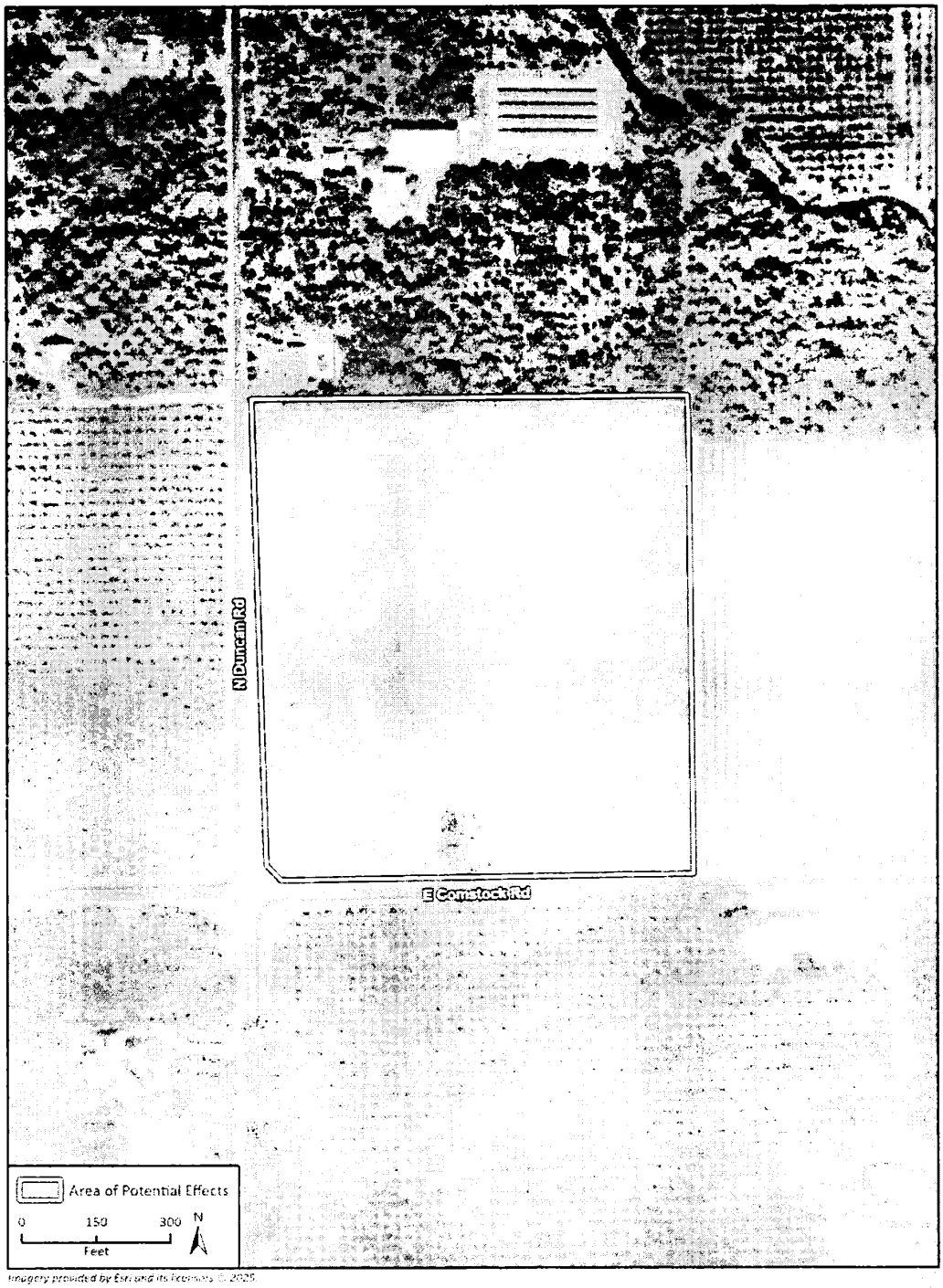


Figure 2 Area of Potential Effects



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2 Regulatory Setting

This section includes a discussion of the applicable federal, state, and local laws, ordinances, regulations, and standards governing cultural resources, which must be adhered to before and during implementation of the project.

2.1 Federal

This project may involve the use of funds provided by the USDA. Projects that involve federal funding or permitting (i.e., have a federal nexus) must comply with the provisions of the National Historic Preservation Act of 1966 (NHPA), as amended (16 United States Code [USC] 470f). The NHPA of 1966 established a federal program for the preservation of historic properties, including built environment, archaeological, and traditional cultural properties. Towards this end, the NHPA establishes both institutions and defined processes to direct federal agencies and support state and local governments in their historic preservation programs and activities. These institutions and processes include the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officers (SHPO), the NRHP, and the Section 106 review process.

2.1.1 Section 106 of the NHPA

Section 106 (16 USC 470f) requires federal agencies to account for the effects of their undertakings on historic properties, and to afford the ACHP a reasonable opportunity to comment on such undertakings. Historic properties are defined as buildings, structures, districts, sites, or objects which are included in or eligible for inclusion in the NRHP. Section 106 is implemented through 36 CFR Part 800, which outlines the process for historic preservation review, including participants, identification efforts, and the assessment and resolution of adverse effects. Per 36 CFR 800.16(y), a federal undertaking is defined as any project requiring or receiving a federal permit, license, approval, or funding. Federal agencies must take steps to determine if the undertaking would result in an adverse effect to historic properties and take measures to avoid or resolve those effects as feasible.

2.1.2 National Register of Historic Places

Authorized by Section 101 of the NHPA, the NRHP is the nation's official list of cultural resources worthy of preservation. The NRHP recognizes the quality of significance in American, state, and local history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects. Per 36 CFR Part 60.4, a property is eligible for listing in the NRHP if it meets one or more of the following criteria:

Criterion A: Is associated with events that have made a significant contribution to the broad patterns of our history

Criterion B: Is associated with the lives of persons significant in our past

Criterion C: Embodies the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction

Criterion D: Has yielded, or may be likely to yield, information important in prehistory or history

In addition to meeting at least one of the above designation criteria, resources must also retain integrity. The NPS recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several of these seven qualities—if not all—defined in the following manner:

Location: The place where the historic property was constructed or the place where the historic event occurred

Design: The combination of elements that create the form, plan, space, structure, and style of a property

Setting: The physical environment of a historic property

Materials: The physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property

Workmanship: The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory

Feeling: A property's expression of the aesthetic or historic sense of a particular period of time

Association: The direct link between an important historic event or person and a historic property

Certain properties are generally considered ineligible for listing in the NRHP, including cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions, relocated structures, or commemorative properties. Additionally, a property must be at least 50 years of age to be eligible for listing in the NRHP. The NPS states that 50 years is the general estimate of the time needed to develop the necessary historical perspective to evaluated significance (NPS 1997: 41). Properties which are less than 50 years must be determined to have "exceptional importance" to be considered eligible for NRHP listing.

2.2 State

2.2.1 California Environmental Quality Act

California Public Resources Code (PRC) Section 21084.1 requires lead agencies to determine if a project could have a significant impact on historical or unique archaeological resources. As defined in PRC Section 21084.1, a historical resource is a resource listed in, or determined eligible for listing in, the CRHR, a resource included in a local register of historical resources or identified in a historical resources survey pursuant to PRC Section 5024.1(g), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant. PRC Section 21084.1 also states resources meeting the above criteria are presumed to be historically or culturally significant unless the preponderance of evidence demonstrates otherwise. Resources listed in the NRHP are automatically listed in the CRHR, as are California Historical Landmarks 770 and above; both are therefore historical resources under CEQA. Historical resources may include eligible built environment resources and archaeological resources of the precontact or historic periods.

CEQA Guidelines Section 15064.5(c) provides further guidance on the consideration of archaeological resources. If an archaeological resource does not qualify as a historical resource, it may meet the definition of a "unique archaeological resource" as identified in PRC Section 21083.2.

PRC Section 21083.2(g) defines a unique archaeological resource as an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria: 1) it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information, 2) has a special and particular quality such as being the oldest of its type or the best available example of its type, or 3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological resource does not qualify as a historical or unique archaeological resource, the impacts of a project on those resources will be less than significant and need not be considered further (*CEQA Guidelines* Section 15064.5[c][4]). *CEQA Guidelines* Section 15064.5 also provides guidance for addressing the potential presence of human remains, including those discovered during the implementation of a project.

According to CEQA, an impact that results in a substantial adverse change in the significance of a historical resource is considered a significant impact on the environment. A substantial adverse change could result from physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired (*CEQA Guidelines* Section 15064.5 [b][1]). Material impairment is defined as demolition or alteration in an adverse manner [of] those characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR or a local register (*CEQA Guidelines* Section 15064.5[b][2][A]).

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2[a][b]).

The requirements for mitigation measures under CEQA are outlined in CEQA Guidelines Section 15126.4(a)(1). In addition to being fully enforceable, mitigation measures must be completed within a defined time period and be roughly proportional to the impact of the project. Generally, a project which is found to comply with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (the Standards) is considered to be mitigated below a level of significance (*CEQA Guidelines* Section 15126.4 [b][1]). For historical resources of an archaeological nature, lead agencies should also seek to avoid damaging effects where feasible. Preservation in place is the preferred manner to mitigate impacts to archaeological sites; however, data recovery through excavation may be the only option in certain instances (*CEQA Guidelines* Section 15126.4[b][3]).

California Register of Historical Resources

The CRHR was established in 1992 and codified by PRC Sections 5024.1 and Title 14 Section 4852. The CRHR is an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change (PRC 5024.1(a)). The criteria for eligibility for the CRHR are consistent with the NRHP criteria but have been modified for state use in order to include a range of historical resources that better reflect the history of California (PRC, 5024.1(b)). Unlike the NRHP however, the CRHR does not have a defined age threshold for eligibility; rather, a resource may be eligible for the CRHR if it can be demonstrated sufficient time has passed to understand its historical or architectural significance (California Office of Historic Preservation [OHP] 2011). Furthermore, resources may still be eligible

for listing in the CRHR even if they do not retain sufficient integrity for NRHP eligibility (OHP 2011). Generally, the OHP recommends resources over 45 years of age be recorded and evaluated for historical resources eligibility (OHP 1995: 2).

A properties is eligible for listing in the CRHR if it meets one of more of the following criteria:

Criterion 1: Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage

Criterion 2: Is associated with the lives of persons important to our past

Criterion 3: Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values

Criterion 4: Has yielded, or may be likely to yield, information important in prehistory or history

California Assembly Bill 52 of 2014

As of July 1, 2015, Assembly Bill (AB) 52 was enacted and expands CEQA by defining a new resource category, "tribal cultural resources". AB 52 establishes, "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states the CEQA lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Section 21074 (a)(1)(A) and (B) define tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and that meets at least one of the following criteria, as summarized in *CEQA Guidelines* Appendix G:

1) Listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k)
2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 also establishes a formal consultation process with California Native American tribes that must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the project." California Native American tribes to be included in the process are those that have requested notice of projects within the jurisdiction of the lead agency.

2.2.2 California Health and Safety Code

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the County Coroner has determined if the remains are subject to the Coroner's authority. If the human remains are of Native American origin, the Coroner must notify the NAHC within 24 hours of this identification.

2.2.3 California Public Resources Code Section 5097.98

Section 5097.98 of the California PRC states that the NAHC, upon notification of the discovery of Native American human remains pursuant to Health and Safety Code Section 7050.5, shall immediately notify those persons (i.e., the Most Likely Descendant [MLD]) that it believes to be descended from the deceased. With permission of the landowner or a designated representative, the MLD may inspect the remains and any associated cultural materials and make recommendations for treatment or disposition of the remains and associated grave goods. The MLD shall provide recommendations or preferences for treatment of the remains and associated cultural materials within 48 hours of being granted access to the site.

2.3 Local

2.3.1 San Joaquin County General Plan

Although San Joaquin County does not have a historic preservation ordinance with criteria for local designation, the General Plan, which was adopted in 2016, includes goals and polices relating to cultural resources (Mintier Harnish Planning Consultants 2016). As presented in the Natural and Cultural Resources Element these include:

Goals

Goal NCR-6 – To protect San Joaquin County's valuable architectural, historical, archeological, and cultural resources.

Policies

NCR-6.1 **Protect Historical and Cultural Resources:** The County shall protect historical and cultural resources and promote expanded cultural opportunities for residents to enhance the region's quality of life and economy.

NCR-6.2 **No Destruction of Resources**: The County shall ensure that no significant architectural, historical, archeological, or cultural resources are knowingly destroyed through County action.

NCR-6.3 **Encourage Public and Private Preservation Efforts:** The County shall continue to encourage efforts, both public and private, to preserve the historical and cultural heritage of San Joaquin County and its communities and residents.

NCR-6.4 **Registration of Historic Properties**: The County shall encourage owners of eligible historic properties to apply for State and Federal registration, to participate in tax incentive programs for historical restoration, and to enter into Mills Act Contracts.

NCR-6.5 **Protect Archeological and Historical Resources:** The County shall protect significant archeological and historical resources by requiring an archeological report be prepared by a qualified cultural resource specialist prior to the issuance of any discretionary permit or approval in areas determined to contain significant historic or prehistoric archeological artifacts that could be disturbed by project construction.

NCR-6.6 **Tribal Consultation:** The County shall consult with Native American tribes regarding proposed development projects and land use policy changes consistent with the State's Local and Tribal Intergovernmental Consultation requirements.

NCR-6.7 **Adaptive Reuse of Historic Structures**: The County shall encourage the adaptive reuse of architecturally significant or historic buildings if the original use of the structure is no longer feasible and the new use is allowed by the underlying land use designation and zoning district.

NCR-6.8 **Land Use and Development:** The County shall encourage land uses and development that retain and enhance significant historic properties and sustain historical community character.

NCR-6.9 **Educational Programs:** The County shall support educational and outreach programs that promote public awareness of and support preservation of historical and cultural resources.

3 Natural and Cultural Setting

This section provides background information pertaining to the natural and cultural context of the APE. It places the APE in the broader natural environment that has sustained populations throughout history. This section also provides an overview of regional indigenous history, local ethnography, and post-contact history. This background information describes the distribution and type of cultural resources documented in the vicinity of the APE to inform the cultural resources sensitivity assessment.

3.1 Natural Setting

The APE lies in the Central Valley of Northern California at an approximate elevation of 30 meters (100 feet) above mean sea level. Nearly none of the surrounding area retains its natural setting as the APE and surrounding area includes agricultural fields and individual residences. The Calaveras River appears to be in its original alignment, approximately 0.1 miles to the northeast of the APE, setting the APE within an alluvial fan landform. The APE is bordered by East Comstock Road to the south, North Duncan Road to the west, and agricultural fields to the north and east. Vegetation in the vicinity of the APE consists of ornamental trees, nonnative grasses, and agricultural crops.

3.2 Cultural Setting

3.2.1 Indigenous History

The APE is located in the Central Valley archaeological region, as defined by Moratto (1984). The Central Valley has been described as one of the largest intermontane basins extending 650 kilometers from the Siskiyou Mountains to the Tehachapi's (Rosenthal et al. 2007). No single chronological framework covers the entirety of the Central Valley, but California prehistory is generally divided into three broad time periods: the Paleoindian period (ca. 11,550 to 8550 BCE), the Archaic Period (8550 BCE to CE 1100) and the Emergent Occupation (CE 1000- European Contact) (Fredrickson 1973, 1974) which has been updated and adjusted by Rosenthal et al. (2007) to further separate the Archaic Period into Lower (8550 BCE to 5550 BCE), Middle (5550 BCE to 550 BCE), and Upper (550 BCE to CE 1100). The prehistoric chronological sequence for the Central Valley presented below is based on Rosenthal et al. (2007) and Moratto (1984).

Paleoindian Period (11,550 to 8550 BCE)

Little is currently known about the Paleoindian period in the Central Valley. Geoarchaeological studies have demonstrated that erosion and deposition have buried or destroyed early archaeological deposits. This period is primarily represented by isolated finds, and currently, the earliest accepted date of human occupation in the Central Valley ranges from 11,550 to 9550 BCE and comes from fluted projectile points similar to Clovis points found at prehistoric sites near Tracy Lake (San Joaquin County) and the Tulare Lake Basin (Fresno, Kings, Kern, and Tulare counties). Along with fluted projectile points, concave base points have been identified along the Tulare Lake shoreline which was occupied during the Late Pleistocene (5.3 million years ago to 11,700 BCE) (Rosenthal et al. 2007).

Lower Archaic (8550 to 5550 BCE)

Climate change at the end of the Pleistocene caused significant periods of alluvial deposition beginning around 9050 BCE. These new alluvial deposits created a clear stratigraphic boundary between the Late Pleistocene and Holocene sediments. The Lower Archaic, like the Paleoindian Period, is represented mainly by limited isolated finds. However, one Lower Archaic site (CA-KER-116) has been identified in the Central Valley proper and few in the foothills surrounding the valley (Rosenthal et al. 2007).

Typical Lower Archaic artifacts include flaked stone crescents and stemmed points. The identification of projectile points and a diverse faunal assemblage at CA-KER-116 indicate hunting was an important subsistence activity. However, no milling tools or plant remains were identified at CA-KER-116; thus, plant use during the Lower Archaic remains unclear. The relationship between foothill and valley floor adaptations is largely unknown during the Lower Archaic; however, it is suggested that the foothill sites may have been seasonally used during this time. More distinct adaptations are apparent in the Middle Archaic, and it is possible that these divergent traditions first emerged in the Lower Archaic (Rosenthal et al. 2007).

Middle Archaic (5550 to 550 BCE)

The Middle Archaic began with substantial climate change to much warmer, drier conditions. Tulare Lake shrank and eventually disappeared. With this came new wetlands which created new habitats, and rising sea levels led to the creation of the Sacramento-San Joaquin Delta, creating new deposits. Fans and floodplains stabilized after an initial period of deposition in 5550 BCE. Archaeological deposits dating to the Middle Archaic are rare in the Central Valley proper due to these geomorphic changes. The Middle Archaic archaeological record has identified a pattern of organized subsistence strategies and increased residential stability. The archetypal pattern of the Middle Archaic has been identified as the Windmiller Pattern. This pattern is represented by extended burials oriented to the west and a sophisticated material culture (Rosenthal et al. 2007). Middle Archaic sites are relatively common in the foothills surrounding the Central Valley and show relatively little change from the Lower Archaic (Rosenthal et al. 2007).

During this time, the mortar and pestle became more widespread suggesting a shift toward more intensive subsistence practices and higher reliance on the acorn. Fishing technologies, such as bone gorges, hooks, and spears, also appear during the Middle Archaic suggesting a new focus on fishing, especially in the Marsh Creek area. Several other technologies become apparent during this time. Baked-clay impressions of twined basketry, simple pottery, and other baked clay objects have been found at several sites. Personal adornment items also become more frequent. Exchange with outside groups is evidenced by the presence of obsidian, shell beads and ornaments (Rosenthal et al. 2007, Moratto 1984; Burns et al. 2016). Trade also seemed to be focused on utilitarian items such as obsidian or finished obsidian tools from at least five separate sources (Moratto 1984).

Upper Archaic (550 BCE to CE 1100)

The Upper Archaic began with the onset of the Late Holocene, marked by a cooler, wetter climate. The environmental conditions of the Upper Archaic were characterized by the return of lakes that had disappeared during the Middle Archaic and a renewed fan and floodplain deposition. The Upper Archaic is better represented in the archaeological record than earlier periods. Cultural diversity was more pronounced and is marked by contrasting material cultures throughout the valley (Rosenthal et al. 2007).

During this period, numerous specialized technologies were developed such as bone tools, and implements, Olivella and Haliotis beads and ornaments, ceremonial blades, and ground-stone plummets. People living in the San Joaquin Valley region traded with neighboring groups for obsidian. Upper Archaic period economies varied by region throughout the Central Valley. Economies were primarily focused on seasonal resources such as acorns, salmon, shellfish, rabbits, and deer (Rosenthal et al. 2007).

Emergent Occupation (CE 1000 to Historic)

The stable climatic conditions of the Upper Archaic continued into the Emergent Period. There has been sporadic research in the San Joaquin Valley on this time period, and thus only the Pacheco Complex lithics on the western edge of the valley has been formally defined. After CE 1000, many of the technologies used during the Archaic disappeared to be replaced by cultural traditions used during European contact. During the Emergent Period, the bow and arrow replaced the atlatl as the preferred hunting method sometime between CE 1000 and 1300 (Moratto 1984).

Increased social complexity is evidenced by increased variation in burial types and burial items and larger residential communities. Burial items such as shell beads, ornaments, and ritually "killed" mortars and pestles are often found in burials. Pottery was frequently obtained through trade with groups living in the foothills to the east. The Panoche side-notched point became important in the western side of the San Joaquin Valley (Rosenthal et al. 2007). In addition to the side-notched point, the Panoche Complex featured large circular structures, flexed burials, marine shell beads, bone awls, millingstones, and mortars and pestles (Moratto 1984).

As with the Archaic Period, Emergent Period economies varied geographically, and as seen through the archaeological record, fishing and plant harvesting increased in importance. Most Emergent residential sites contain diverse assemblages of mammal and bird remains and large amounts of fish bone. One thousand years ago, the mortar and pestle become the dominant tool type and small seeds increase in archaeological deposits over time (Rosenthal et al. 2007).

3.2.2 Ethnographic Setting

The APE is located in the traditional territory of the Penutian-speaking Northern Valley Yokuts, which includes the San Joaquin Valley (Kroeber 1925; Wallace 1978a). Three geographical divisions of the Yokuts are the Northern Valley, Southern Valley, and Foothill Yokuts. The distinction between the three groups is primarily based on language dialect (Mithun 2001). The APE is located approximately 0.1 mile southwest of the Calaveras River which is associated with the Chulamni or Chilamne Yokuts (Wallace 1978a; Bennyhoff 1977). The primary village of the Chulamni or Chilamne Yokuts was Yatchicumne (Yachik), near Stockton along the Calaveras River (Wallace 1978a).

Yokuts were split into self-governing local groups that included several villages. Each group had a chief who directed ceremonies, mediated disputes, handled punishment of those doing wrong, hosted visitors, and provided aid to the impoverished (Wallace 1978a; 1978b). Other political positions included the chief's messenger or herald (Wallace 1978a). Villages frequently included mat-covered granaries and a sweathouse (Mithun 2001; Sutton et al. 2016).

Yokuts subsistence strategy was based on a mixed economy focused on fishing, collecting, and hunting small game. Fishermen employed tule rafts and caught fish with nets, spears, basket traps, and bow and arrow. They often gathered mussels and hunted turtles in lakes, rivers, and streams. Wild seeds and roots contributed a large portion to the Yokuts diet. Tule roots were gathered, dried,

and pounded into a flour that was prepared as a mush. Tule seeds and grass and flowering herb seeds were prepared in the same way. Leaves and stems of certain plants, such as clover and fiddleneck, were also collected. Acorns, a staple of most California Native Americans, were not readily available in the ethnographic territory of the Yokuts. Some Yokuts tribes traded for acorns with neighboring groups, such as the Salinan and Chumash to the west, the Foothill Yokuts to the east, and the Kawaiisu and Kitanemuk to the southeast (Kroeber 1925). Waterfowl was frequently hunted with snares, nets, and bow and arrow. Land mammals and birds contributed a smaller part of the Yokuts diet. Small game was occasionally taken in snares or traps or shot with bows and arrows (Wallace 1978a, 1978b; Sutton et al. 2016).

Yokuts technology depended heavily on tule. Stems of the plant served as the raw material for baskets, cradles, boats, housing, and many other items. Manos and metates were used to process food and animal hides (Barton et al. 2010; Sutton et al. 2016). Tools such as knives, projectile points, and scraping tools were made from imported lithic materials, because stone was not readily available in the Central Valley. Some tools, such as bead drills, could be made from obsidian obtained from some distance or obtained through trade (Sutton et al. 2016). Marine shells secured through trade with coastal groups were used as shell money and personal adornment items, such as Olivella beads (Sutton et al. 2016; Wallace 1978a).

3.2.3 Post-Contact Setting

Post-contact history for the state of California is generally divided into three periods: the Spanish Period (1769 to 1822), Mexican Period (1822 to 1848), and American Period (1848 to present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican-American War, signals the beginning of the American Period when California became a territory of the United States.

Spanish Period (1769-1822)

Spanish explorers made sailing expeditions along the coast of California between the mid-1500s and mid-1700s. Juan Rodriguez Cabrillo in 1542 led the first European expedition to observe what was known by the Spanish as Alta (upper) California. For more than 200 years, Cabrillo and other Spanish, Portuguese, British, and Russian explorers sailed the Alta California coast and made limited inland expeditions, but they did not establish permanent settlements (Bean 1968; Rolle 2003). The Spanish crown laid claim to Alta California based on the surveys conducted by Cabrillo and Vizcaíno (Bancroft 1885; Gumprecht 1999). The first documented interaction between Spaniards and Yokuts occurred in 1772, when Captain Pedro Fages traveled to the San Joaquin Valley by way of Tejon Pass (Arkush 1993).

By the eighteenth century, Spain developed a three-pronged approach to secure its hold on the territory and counter against other foreign explorers. The Spanish established military forts known as presidios, as well as missions and pueblos (towns) throughout Alta California. The 1769 overland expedition by Captain Gaspár de Portolá marks the beginning of California's Historic Period, occurring just after the King of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. Construction of missions and associated

presidios was a major emphasis during the Spanish Period in California to integrate the Native American population into Christianity and communal enterprise (Milliken et al. 2009).

Although no missions were located near the APE, baptismal records indicate that Yokuts and Miwok speakers comprised a significant portion of the populations at Mission San José (founded in 1797) (Milliken et al. 2009). Having already destabilized coastal populations, the missions attempted to replenish their neophyte populations with Native groups living further inland (Sandos and Sandos 2014). Mission San José relocated Yokuts individuals from the Stockton area to the mission between 1810-1822 (Milliken et al. 2009). Many fled the missions and sought shelter in California's interior regions, including the greater Central Valley (Arkush 1993; Bennyhoff 1977). Concurrently, some Native American groups began raiding Spanish properties and seizing livestock, leading to the spread of ranching practices outside of the missions' control. By the time of Mexican independence, Native vaqueros were some of the main participants in the hide and tallow economy, and equestrian practices were well-known among the Yokuts (Zappia 2012). Despite efforts to push occupation inland, the Spanish never gained control of the Sacramento or San Joaquin Valleys (Arkush 1993).

Spain began making land grants in 1784, typically to retiring soldiers, although the grantees were only permitted to inhabit and work the land. The land titles technically remained property of the Spanish king (Livingston 1914).

Mexican Period (1822-1848)

Several factors kept growth within Alta California to a minimum, including the threat of foreign invasion, political dissatisfaction, and unrest among the indigenous population. After more than a decade of intermittent rebellion and warfare, New Spain won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants (Dallas 1955).

Extensive land grants were established in the interior during the Mexican Period, in part to increase the population inland from the more settled coastal areas where the Spanish had first concentrated their colonization efforts. The secularization of the missions following Mexico's independence from Spain resulted in the subdivision of former mission lands and establishment of many additional ranchos. Commonly, former soldiers and well-connected Mexican families were the recipients of these land grants, which now included the title to the land. While no ranchos were established within the vicinity of the APE, Mexican influence into California's interior was felt through military incursions and the continued coercion of the missions. From 1825 to 1828, the population of Mission San José was bolstered by the addition of neophytes from the Quenemsias, Guaypems, Cosomnes, and Chilamnes Miwok groups of the northern Delta and upper Calaveras River. In 1828, the Laquisemnes Miwoks of the lower Stanislaus River with various Yokuts groups to resist Mexican control; this uprising was ended by a Mexican military victory in June 1829 (Milliken et al. 2009).

The largest land grants in the California interior were awarded to John Sutter, a German Swiss immigrant who became a Mexican citizen. In 1839, he established a cattle ranch and farm called New Helvetia, headquartered at Sutter's Fort at the divergence of the Sacramento and American Rivers (Bean 1968). During the same period, fur trappers began to explore the area. The first American trapper to come to California, Jedidiah Smith, explored the Sierra Nevada before arriving in the Sacramento Valley in 1827, and traveled along the American and Consumnes rivers, as well as through the San Joaquin Valley.

During the supremacy of the ranchos (1834 to 1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary Southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The number of nonnative inhabitants increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising California population contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities. By 1833, an epidemic of malaria reached the San Joaquin Valley, with the disease potentially spread to the region by Hudson's Bay Company fur trappers entering the area in search of beaver and otter pelts (Hoover et al. 2002; Arkush 1993).

American Period (1848- Present)

The United States went to war with Mexico in 1846. During the first year of the war, John C. Fremont traveled from Monterey to Los Angeles with reinforcements for Commodore, Stockton, and evaded Californian soldiers in Santa Barbara's Gaviota Pass by taking the route over the San Marcos grade instead (Kyle 2002). The war ended in 1848 with the Treaty of Guadalupe Hidalgo, ushering California into its American Period.

California officially became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as United States territories (Waugh 2003). Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the Southern California economy through 1850s. The discovery of gold in the northern part of the state led to the Gold Rush beginning in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides but also as a source of meat and other goods. The APE is located in the foothills of the Sierra Nevada, with its proximity to Calaveras River (approximately 2 miles north) and the Mother Lode placing it within an area that was heavily affected by the Gold Rush. By 1849, nearly 90,000 people had ascended upon the gold fields. Travelers to the Mother Lode sometimes passed through the "Fifteen Mile House," a stagecoach stop 15 miles from Stockton, built in the area where the community of Linden is now located (Smith 1976). By the 1850s, prospectors had rushed to stake claims along Calaveras River, with some of the most sizable immigrant ethnic groups including Chinese, Chilean, Mexican, and French miners (Chan 2000, Rohe 1996). Miwok and Yokuts populations were further destabilized by the upswell of prospectors. In 1852, a community of Muqueleme Miwok (likely intermarried and allied with Chilamne Yokuts) lived at the Calaveras River crossing of Bellota. However, violent encroachment from settlers and forced displacement led to the abandonment of Native villages along the Calaveras and Mokelumne Rivers by the turn of the century, with communities predominately moving to the Buena Vista and Ione areas of Amador County (Bennyhoff 1977).

Local History

Amid the excitement of the Gold Rush, a wave of settlers poured into San Joaquin County, prompting its official establishment in 1850 as one of California's original 27 counties. That same year, Captain Charles M. Weber founded Stockton, which would grow to become the county's largest city. The rural community of Linden, where the APE is located, was established in 1862. (Lewis Publishing Company 1890).

Over time, San Joaquin County evolved into a thriving agricultural region. In the early years, the county's main agricultural output was grain, with a flour mill active as early as 1854 (Smith 1976). The introduction of railroads through the county also encouraged the growth of the agricultural industry and orchards, as the trains could move products to more markets. The Central Pacific

Railroad was constructed in the 1860s from Sacramento to Stockton and west to San Francisco, and in 1909 the Western Pacific Railroad was added to the same line as the Central Pacific Railroad (Davis 1991).

From the late nineteenth to the early twentieth century, agricultural concerns in the area were focused on irrigation, with the Calaveras River and Mormon Slough dammed and diverted for farming near Bellota (*Stockton Evening and Sunday Record* 1935; Smith 1976). When World War II began, California crops fetched a high price, allowing the region to diversify plantings and develop as an area known for beans, walnuts, and cherries, among other crops. The unincorporated areas of San Joaquin County remain rural and agricultural to this day, with some residential and commercial development adjacent to cities in the county.

The parcel comprising the APE was formerly an agricultural property, namely a walnut-producing orchard. The following context on agriculture in San Joaquin County was excerpted from *A Historical Context and Methodology for Evaluating Agricultural Properties in California* prepared by Agricultural HARD Team and the California Department of Transportation in 2023 (Agricultural HARD Team and California Department of Transportation 2023: 31-32, 143-146):

Agriculture in San Joaquin County

> The San Joaquin Valley forms the southernmost part of the Great Central Valley. The region includes all or portions of the counties of San Joaquin, Contra Costa, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Kern. Approximately one third of the state's farmland lies in the San Joaquin Valley, and nearly 90 percent of the valley is currently under irrigation. No single river runs through the entire valley, although the San Joaquin River drains the northern portion of the valley and forms the core of the state's Delta region. Lake basins, once fed by runoff from the Sierra Nevada, formed the southern end of the valley. Early farming depended upon natural aquifers for irrigation, and on the reclamation of the Tulare and Buena Vista Lake Basins. The 1940s and 1950s saw increased irrigation water into the southern end of the valley through projects such as the CVP. Annual rainfall is highest at the northern end of the San Joaquin Valley near Sacramento, which averages around 20 inches a year, and lowest at the southern end of the valley near Bakersfield, which receives approximately 12 inches a year.
>
> The San Joaquin Valley is home to a wide variety of farming enterprises, ranging from smaller, intensively cultivated farms to large, extensive, industrial enterprises. Fruit and nuts are important crops, as are many other field crops (e.g., barley, beans, corn, hay, potatoes, sugar beets, and wheat). Vineyards are gaining importance in the region. Cotton has been among the most important field crops in the valley since its introduction in 1871. Livestock is widely distributed throughout the valley floor, including the former home to the famous Miller and Lux cattle enterprise. Dairies, poultry, and swine farms produce other products including milk, chickens, turkeys, eggs, pork, and apiary products. Grain sorghum became important in the area after 1870 as a summer grain crop.

Nut Industry in California

> Immigrants brought chestnuts to California during the Gold Rush, mostly as seed of the European chestnut, but also some chestnuts of mixed origin and grafted varieties. Hundred plus-year-old chestnut trees still exist in the Mother Lode region, such as the original Colossal tree planted by Benjamin Tonella, a Swiss Italian immigrant, in Nevada City. Century-old chestnut trees also survive in the North Coast and Central Valley regions. Most of the current chestnut production in California reflects post-World War II production. Chestnuts are typically

grown on farms less than 10 ac. in size. Chestnuts are California's commercial true nut crop, although recently small in numbers with only 155 ac. under cultivation in 2005, decreased from 600 ac. planted in chestnuts in 2000.

The most successful nuts grown commercially in California are walnuts and almonds. Post World War II era nut production also included macadamia, pistachio, and pecan. Although pecans have been grown in California since the 19th century, the first commercial orchard was established in Clovis in the mid-1970s. Today, the pecan production belt is a narrow strip that stretches from Chico and Orland south to Bakersfield. In 2020, pecans were grown primarily on 6,000 ac. of farmland located in Fresno, Tulare, and Kern counties.

Professor C. H. Dwinelle of the University of California at Berkeley first introduced the macadamia nut to California in 1877. He obtained seeds from Australia and planted several seedlings along Strawberry Creek on the Berkeley campus. In addition, two nurserymen, Ernest Braunton and Charles Knowlton, started selling seedling trees in Southern California around 1910. Macadamia trees were planted as ornamental and backyard trees for many years before World War II, particularly in the southern seven counties of the state. People who served in the Pacific Theater during World War II were exposed to macadamia nuts in Hawaii and returned from the war to search local markets for the nut. Commercial planting of macadamia began in California in 1946 in response to this heightened interest, when Robert W. Todd planted 2 ac. of seedling trees on his property on Grandview Street in Oceanside. The California Macadamia Society was formed in 1953 to guide the newly developing industry, promote their product, and conduct research. In response, the University of California Los Angles established a Subtropical Horticultural Department to better study and understand the nut. Macadamia trees thrive in high humidity, subtropical climates. Although the nut grows from San Luis Obispo south to the Mexican border, Southern California, particularly the San Diego County coastal zone, has in the neighborhood of 2,500 ac. planted in macadamias.

American traders first introduced the pistachio to California in the 19th century; the first tree was planted in Sonoma in 1881, primarily because of increased demand. In 1929 the commercial development of pistachios began when American plant scientist William E. Whitehouse spent six months in Persia (modern-day Iran) collecting seed that he brought back to California. The next year, experimental plantings were established in California. However, no standout pistachio trees emerged until 1950, because pistachio trees require at least a full seven to ten years maturing. The California variety, named Kerman for the famous carpetmaking city in Iran near the area where the trees were first cultivated, began to expand throughout the state in the 1960s. Another account suggests that the California town of Kerman in Fresno County was actually named after two land speculators who subdivided and sold lots off to start the town. In 1977, there were 1,700 ac. planted in pistachios in the state, primarily in the Central Valley. By 2005, California was the second largest producer of pistachios worldwide with over 100,000 ac. Planted. In 2020 there were 288,595 ac. planted in pistachios, primarily in Fresno, Kings, Madera, Tulare, and Kern counties, representing over 98 percent of all pistachios grown in the United States.

The walnut, although first introduced by the Spanish padres around 1769, did not flourish until the time of the early American settlers. Varieties of walnuts were often planted on homesteads as part of cultivation requirements and frequently remain as indications of the locations of homesteads that no longer exist. The first attempt at commercial production was reportedly established at Warner's Ranch in San Diego County in 1843. More than a dozen plantings existed by 1850, mainly near Los Angeles but also scattered from San Diego to Napa counties. In

the Bay Area, California walnuts grew along creeks and streams. Walnut Creek, for example, located in Contra Costa County, was named for the groves of native walnuts growing in the area.

Joseph Sexton, a horticulturist, initiated California's first commercial walnut enterprise in 1867 to 1868, when he planted a grove of English walnuts in Goleta, next to Santa Barbara. Within a few years, 65 percent of all fertile land in this region grew Sexton's English walnuts. Over the next thirty years, orchard plantings multiplied and extended as far north as Chico. In 1875, the State Agricultural Society recorded 138,673 walnut trees, with 15 counties reporting more than 1,000 trees each. The 1870s marks a watershed for walnuts in California. Until this time, walnut plantings had consisted entirely of the small, round, hard-shelled, inferior walnuts introduced by the padres. In addition to Joseph Sexton's soft-shell English walnut, Felix Gillet introduced and developed certain French varieties at Nevada City, which became the basis for the industry in central and Northern California and in Oregon. Between 1880 and 1905 superior varieties of walnuts were planted, including Placentia and Eureka, which now make up most of the Southern California production.

Between 1900 and 1930 walnut acreage increased nearly sevenfold and production increased tenfold. The California Walnut Growers' Association organized in 1912 and successfully applied the principles of cooperative effort to the solution of the problems of the industry. By 1910, the introduction of Valencia oranges and lemons along with increased urban population in Southern California, resulted in the elimination of walnut orchards in Los Angeles and Orange counties. The City of Walnut in Los Angeles County, for example, originated as part of Rancho Los Nogales ('Ranch of the Walnut Trees'), which was acquired piecemeal from Jose de la Cruz Lineras by the Vejar family beginning in 1837. Local growers in the city planted both lemon and walnut trees, with the latter being the major agricultural product until the 1930s, when a pest infestation destroyed the walnut orchards. In addition, declining yields and quality, increasingly warmer winters that caused a delay of blooming, and a pest infestation resulted in the restriction of acreage in Southern California and consistent expansion in the north. By the 1930s the commercial walnut business moved northward to Stockton where improved irrigation, better pest control, ideal climate, and rich soil were more conducive to larger yields. By this time the California walnut had virtually displaced the imported product in United States markets and had become an important export.

California emerged as the largest producer of walnuts in the world by the 1940s. The California Walnut Board was established in 1948 to represent the walnut industry and growers. Today, the Sacramento and San Joaquin valleys are the center of walnut production, producing 99 percent of the commercial United States walnut supply. On the global market, California produces two-thirds of the world's supply of walnuts. Today, almonds are California's largest drupe crop in both value and acreage. The Spanish introduced the almond tree to California in the late 1700s. The moist, cool weather of the coastal missions, however, did not provide ideal growing conditions, and trees were not successfully planted inland until the 1800s. The first attempts to grow almonds commercially in the United States occurred in New England and the Middle Atlantic and Southern states. Nevertheless, growers soon learned that the early blooming almond succumbed to late frosts or disease in areas of high humidity. California's Central Valley, with its Mediterranean climate, provided the right environmental conditions for successful almond production. In the early 1850s, plantings near Sacramento, Monterey, and Los Angeles all showed promise.

During the 1870s, through research and crossbreeding, several of today's prominent almond varieties had been developed. By the turn of the 20th century, the almond industry firmly

established itself in the Sacramento and San Joaquin valleys. The rise of almond production in California is largely the result of the California Almond Growers Exchange, now Blue Diamond. In 1909, J. P. Dargitz of Acampo near Stockton took an active lead in promoting an almond cooperative and made an appeal for a state organization. Members from nine independent almond growing associations in Antelope, Orangevale, Fair Oaks, Davis, Capay, Sutter County, Live Oak, Oakley, and San Joaquin County then met in Sacramento on18 March 1910 to discuss the formation of a statewide organization. As a result, the California Almond Growers Exchange (CAGE) formed on 7 May 1910 consisting of 230 independent growers with headquarters in Sacramento. In 1915 the CAGE built a new receiving and packaging plant that eventually grew into the largest nut processing plant in the world. In 1915 the cooperative adopted the Blue Diamond (the rarest diamond in the world) as their brand symbol, as a way to distinguish the California project from Spanish and Italian imports. As a result of their marketing efforts, government lobbying, and quality control, California's almond production increased from an annual average of 3,500 tons in the 1910s to 9,440 tons in the 1920s.

In 1931, Blue Diamond had 400 growers supplying 20 million pounds of almonds and 2,000 growers by 1940. Today, approximately 3,500 growers cooperatively own Blue Diamond Growers (established in 1980 from CAGE) and along with another 2,500 growers in California, produce the entire supply of almonds in the United States and nearly 80 percent of the worldwide production. In addition, almonds currently rank as the seventh largest U.S. food export. Today, California is the only place in North America where almonds are grown commercially, with more than 1.5 million ac. planted in the San Joaquin and Sacramento valleys, stretching 400 miles between Bakersfield and Red Bluff. In 2019 three billion pounds of almonds were produced.

4 Methods

This section presents the methods for each task completed during the preparation of this assessment.

4.1 California Historical Resources Information System Records Search

On August 19, 2025, Rincon received California Historical Resources Information System (CHRIS) search results from the Central California Information Center (CCIC) (Appendix A). The CCIC, located at California State University, Stanislaus, is the official state repository for cultural resources records and reports for the county in which the Project is located. The records search identifies previously recorded cultural resources, as well as previously conducted cultural resources studies in the APE and a 0.5-mile radius. Rincon also reviewed the NRHP, CRHR, California Historical Landmarks list, and the Built Environment Resources Directory. Additionally, Rincon reviewed the Archaeological Determination of Eligibility list. Results of the records search can be found in Appendix A of this cultural resources technical report.

4.2 Sacred Lands File Search

Rincon contacted the NAHC on August 19, 2025, to request a search of the SLF and a contact list of Native Americans culturally affiliated with the vicinity of the APE (Appendix B). Rincon did not conduct Native American outreach for this project. It is the lead federal agency's responsibility to conduct outreach and consultation with the individuals and Tribes identified on the NAHC contact list.

4.3 Local Historical Group Outreach

To support compliance with Section 106 of the NHPA, Rincon initiated local historical group outreach for the Project on September 2, 2025. As part of the process of identifying cultural resources that should be considered in the development of the APE, Rincon contacted the San Joaquin County Historical Museum to request information regarding historic properties in the APE and the surrounding area (Appendix C).

4.4 Archival Research

Rincon completed additional background and archival research in support of this report from August through October 2025. A variety of primary and secondary source materials were consulted. Sources included, but were not limited to, historical maps, aerial photographs, and written histories of the area. The following sources were utilized to develop an understanding of the APE and its context:

- *A Historical Context and Methodology for Evaluating Agricultural Properties in California* prepared by the California Department of Transportation (Caltrans) and Agricultural HARD Team in 2023

- San Joaquin County Assessor's Office
- Historical aerial photographs accessed via NETR Online
- Historical aerial photographs accessed via University of California, Santa Barbara Library FrameFinder
- Historical USGS topographic maps
- San Joaquin County Building Permits Accessed via the San Joaquin County Community Development Department
- Historical newspaper clippings obtained from Newspapers.com
- Various historical records via Ancestry.com
- Geologic Maps via the USGS National Geologic Map Database
- USDA Web Soil Survey
- Bureau of Land Management (BLM) General Land Office (GLO) Survey Plats

4.5 Field Survey

Rincon Archaeologists Joel Rudewicz and Anthony Martin conducted a pedestrian survey of the APE on September 9, 2025. The pedestrian survey was conducted using transect intervals spaced 15 meters apart and oriented generally from north to south. Exposed ground surfaces were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), ecofacts (marine shell and bone), soil discoloration that might indicate the presence of a cultural midden, soil depressions, and features indicative of the former presence of structures or buildings (e.g., standing exterior walls, postholes, foundations) or historical debris (e.g., metal, glass, ceramics). Ground disturbances such as burrows and drainages were also visually inspected. Survey accuracy was maintained using a handheld Global Positioning Satellite unit and a georeferenced map of the APE. Survey characteristics and conditions were documented using field records and a digital camera. Copies of the survey notes and digital photographs are maintained digitally by Rincon.

In addition, under the direction of Rincon architectural historian Michelle Anderson, Joel Rudewicz and Anthony Martin conducted a built environment survey of the APE on September 9, 2025. Built environment resources in the APE, including buildings, structures and associated agriculture elements located within the APE were visually inspected. The overall condition of these resources was documented using notes and digital photographs which are maintained digitally by Rincon.

4.6 Evaluations

Pursuant to OHP Guidelines (OHP 1995: 2), properties over 45 years of age, including 18133 East Comstock Road, were evaluated for listing in the NRHP and CRHR and recorded on California Department of Parks (DPR) 523 series forms. See Appendix D.

5 Findings

This section presents the findings for each task completed during the preparation of this assessment.

5.1 California Resources Information System Records Search

The CHRIS records search and background research did not identify any cultural resources studies or cultural resources within the APE or the 0.5 mile search radius (Appendix A).

5.2 Sacred Lands File Search

The NAHC responded to the SLF search request on August 21, 2025, stating that the results of the SLF search were negative, meaning there are no documented sacred lands in the vicinity of the APE. See Appendix B for the NAHC response, including the Tribal contacts list. Rincon did not conduct Native American outreach for this project. It is the lead federal agency's responsibility to conduct outreach and consultation with the individuals and Tribes identified on the NAHC contact list.

5.3 Local Historical Group Outreach

The following bullets summarize responses received from the San Joaquin County Historical Museum contacted by Rincon:

- On September 2, 2025, Phillip E. Merlo, Executive Director of San Joaquin County Historical Museum responded to Rincon via email stating that there are no known points of historical significance associated with the project site.

Documentation related to this outreach effort is included in Appendix C.

5.4 Archival Research

5.4.1 Aerial Imagery and Historical Topographic Maps Review

Rincon completed a review of historical topographic maps and aerial imagery to ascertain the development history of the APE. An 1855 survey plat illustrates the APE, situated in Section 3 of Township 2 North, Range 8 East, as entirely undeveloped, with the Calaveras River positioned to the northeast. In contrast, neighboring Section 4 had already undergone improvements by that time, including a schoolhouse, residence, several fences, and a ditch, indicating the early stages of settlement in the vicinity (GLO 1855). By 1894, the segments of Duncan Road and Comstock Road adjacent to the APE were complete (USGS 1894).

Based on historical topographical maps and aerial photographs, the APE was developed with multiple structures prior to 1941, presumably a residence and ancillary facilities (NETR Online 1941; USGS 1908). The structures present with the APE in a 1941 aerial photo do not appear to be the current buildings on the property. San Joaquin County Assessor data indicates that the residence on

the property was constructed in 1948, and by 1957 the broader parcel was planted as a walnut orchard, and the extant barn had been built (NETR Online 1957; ParcelQuest 2025). The garage sited north of the house was added sometime between 1972 and 1984 to replace a smaller ancillary building (NETR Online 1968, 1984; UCSB 1972).

Through the present day, the immediate surroundings of the APE have remained rural, and the adjacent properties appear to be agricultural and/or residential in use. Very few modifications appear to have been imposed on the property within the APE since the 1980s. In recent years, likely sometime after 2023, the walnut orchard on the property was cleared (Google Earth 2023).

5.4.2 Geoarchaeological Review

According to published geologic mapping, the APE is underlain by Holocene-aged alluvial fan deposits (map unit Qf) formed from sedimentation of the nearby Calaveras River (Strand and Koenig 1965). Holocene-age alluvium is the most likely landform to contain pre-contact subsurface archaeological resources. Since human populations increased over time, Late Holocene-age soils are more likely to yield archeological resources than older, Early Holocene or Pleistocene-age soils (Rosenthal and Meyer 2004).

Soil mapping indicates the APE is underlain by Cogna Series (85 percent), Archerdale Series (6 percent), Nord Series (4 percent), Veritas Series (3 percent), and Honcut Series (1 percent) (California Soil Web 2025). Of these, the Nord Series contains buried A Horizon soils indicative of buried paleosurfaces. The Nord Series contains an Ab1 and Ab2 Horizon between 52 and 72 inches (4.33 and 6 feet) below ground surface consisting of dark grayish to grayish brown fine sandy loam.

5.4.3 Archaeological Sensitivity Summary

The archival research indicates the sediments mapped at surface within the APE are generally conducive to the natural burial and preservation of archaeological resources given they were deposited during the Holocene, a period that dates to recorded human occupation of the region. In addition, due to the episodic nature of alluvial sedimentation, the sudden burial of artifacts is possible, and alluvial soils have an increased likelihood of containing buried archaeological deposits (Waters 1983; Rosenthal and Meyer 2004). The soils map indicates the APE is underlain by at least one soil series (Nord Series) that has recorded buried A Horizon soils indicative of buried paleosurfaces between 52 and 72 inches (4.33 and 6 feet) below ground surface. As an A Horizon represents stable landforms considered desirable for human occupation, the presence of buried A Horizon soils increases the potential for buried pre-contact archaeological deposits (Rosenthal and Meyer 2004). The APE is located approximately 0.16 kilometers (0.1 mile) southwest of Calaveras River, as shown by topographic maps. Pre-contact Yokut populations, specifically Chulamni or Chilamne Yokuts, have recorded village sites along the Calaveras River, and the potential for pre-contact archaeological sites has been positively correlated with proximity to freshwater sources such as creeks, rivers, and lakes (Meyer et al. 2010). While the CHRIS records search results did not identify cultural resources within, or in the vicinity of, the APE, no previous studies have been conducted in the area that would have identified these resources. In addition, the SLF search results were negative, indicating the absence of recorded sacred lands within or in the vicinity of the APE. However, the proximity to the Calaveras River and presence of Holocene-aged alluvial geologic formations with recorded buried A Horizon soils indicates that the APE has high sensitivity for the presence of subsurface pre-contact archaeological deposits between 4 and 6 feet in depth.

In addition, the APE has been in use as an orchard with an associated residential building since at least the late 1940s. While the majority of the property was utilized as a walnut orchard, the APE has remained largely unchanged since this time, with only recent plowing and removal of the orchard. Potential subsurface archaeological deposits typical of agricultural properties include wells, privies, cisterns, burn areas, refuse disposal areas, and burials. Agricultural related domestic buildings may not have substantial associated refuse deposits because refuse was normally disposed of in a designated landfill (Agricultural HARD Team and California Department of Transportation 2023). The first recorded landfill in San Joaquin County was Harney Lane Landfill, located in Lodi approximately 10 miles northwest of the APE, was established in 1948 (Lea and Kennedy 2011). Other common practices for the area included hillside or roadside dumping. Based on the longstanding use of the area since the 1940s, the APE has a moderate sensitivity for post-contact archaeological deposits associated with the agricultural residence.

5.5 Field Survey

5.5.1 Built Environmental Survey

The following section summarizes the results of built environment fieldwork. The fieldwork and background research resulted in the identification of one historic-age property in the APE, 18133 East Comstock Road (Table 1).

Table 1 Built Environment Resources

Address	APN	Description
18133 East Comstock Road	091-170-060	Former agricultural property with a single-family residence, barn, and garage

18133 East Comstock Road (Figure 3) is a 19.5-acre agricultural property located at the intersection of Comstock Road and Duncan Road developed with historic-age buildings, including a single-family residence, detached garage, and a storage barn. The buildings are positioned at the south end of the property and are accessed from a driveway fronting Comstock Road. The majority of the parcel was formerly planted as a walnut orchard. Aerial photographs reviewed during research indicate that the orchard trees were removed between 2023 and 2025 (Google Earth 2023).

The residence has an irregular footprint set on a concrete foundation. The low-pitch hip roof is covered with modern composition shingles. The exterior cladding consists of brick, grooved plywood, and modern textured stucco. All of the visible windows and doors appear to be modern units.

The main, south façade of the residence faces East Comstock Road (Figure 4). The façade is primarily sided with red bricks arranged in a running bond pattern. The entrance to the house is accessed from a recessed porch partially obscured by a metal screen. The exterior wall at the back of the porch is clad with vertically grooved plywood panels. Three modern windows with anodized metal frames fenestrate the south elevation.

The sides and rear of the of the residence are coated with modern textured stucco and are fenestrated with modern anodized metal-frame windows (Figure 5 through Figure 8). A chimney sided with grooved plywood paneling adjoins the east elevation near the southeast corner of the building.

The garage is sited directly north of the residence. This rectangular-plan ancillary building sits on a concrete foundation and is topped by a gable roof with overhanging eaves. The roofing material is modern composition shingles. Similar to the residence exterior of walls of the garage are clad with modern textured stucco. The primary gable end of the garage faces east and features two vehicle bays fitted with modern overhead doors (Figure 9). A small, rectangular vent fenestrates the gable peak. The side elevations largely lack ornamentation or fenestration save for a secondary entrance with a modern metal door on the south side (Figure 10 and Figure 11), The rear, west gable end of the garage is fenestrated with a modern sliding window and rectangular gable vent (Figure 12).

The wood-frame barn is positioned northeast of the residence (Figure 13 through Figure 15). The barn has a rectangular footprint and a shed roof sheathed with corrugated metal panels. The exterior walls are comprised of vertical wood boards. The primary, west façade includes several open storage bays. Four bays separated by wood posts punctuate the main portion of the barn and a fifth bay opens to a separate storage wing at the north end of the building. The south, north, and east sides of the barn are void of openings or decorative detailing.

Figure 3 18133 East Comstock Road, showing the residence and barn at the left side of the frame. Camera facing northwest, September 9, 2025.

Figure 4 Primary, south façade of the residence at 18133 East Comstock Road. Camera facing northwest, September 9, 2025.

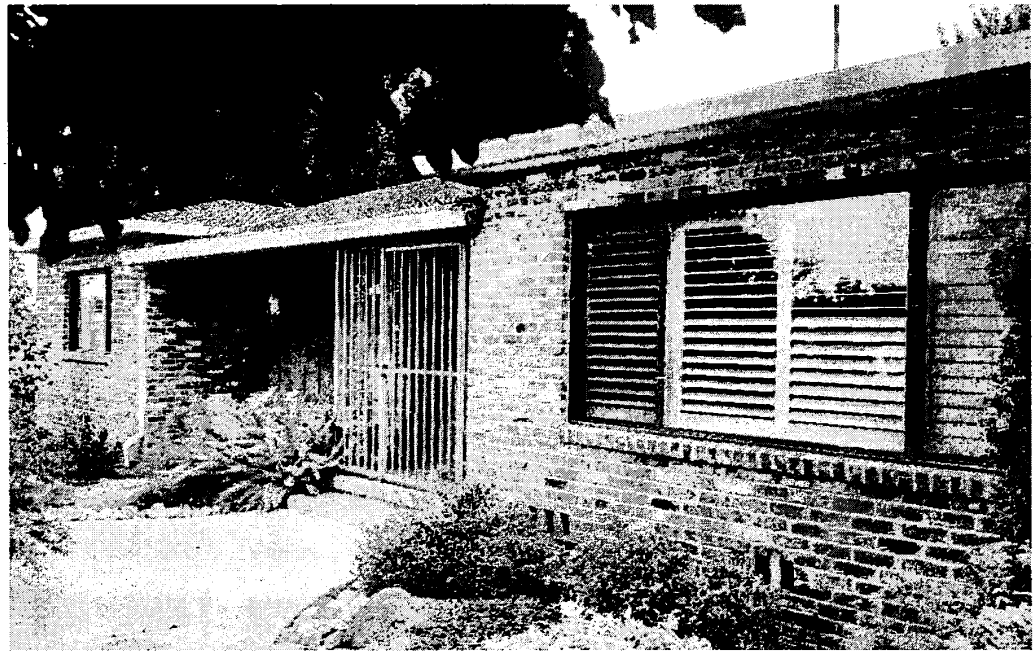


Figure 5 East elevation of the residence. Camera facing west, September 9, 2025.

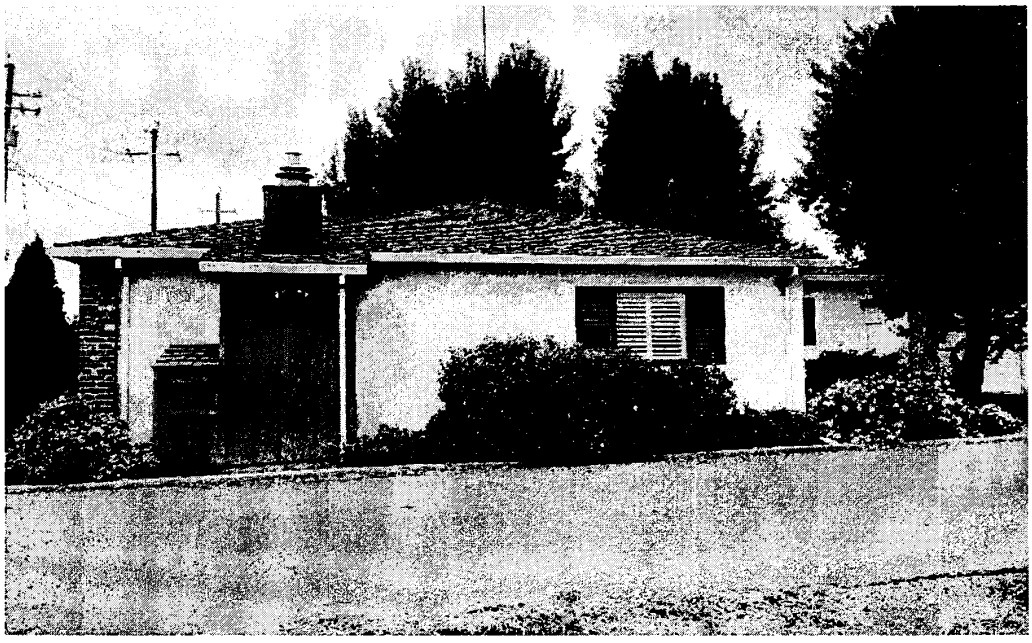


Figure 6 Northeast corner of the residence. Camera facing southwest, September 9, 2025.

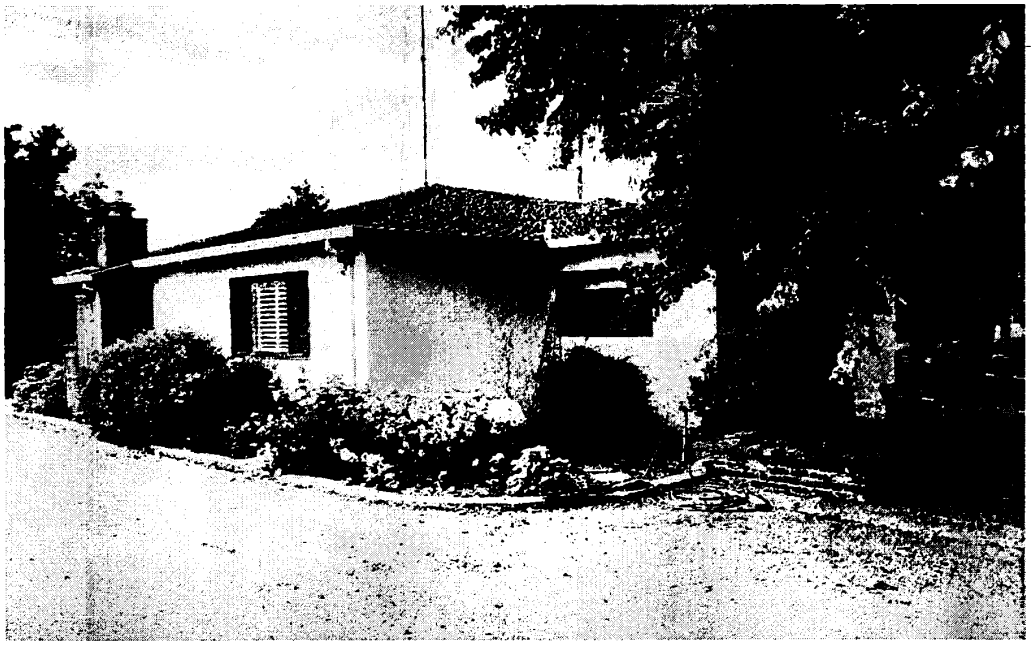


Figure 7 West elevation of the residence. Camera facing east, September 9, 2025.

Figure 8 Rear of the residence, viewed from the northwest corner. Camera facing southeast, September 9, 2025.

Figure 9 Primary, east façade of the garage at 18133 East Comstock Road. Camera facing west, September 9, 2025.

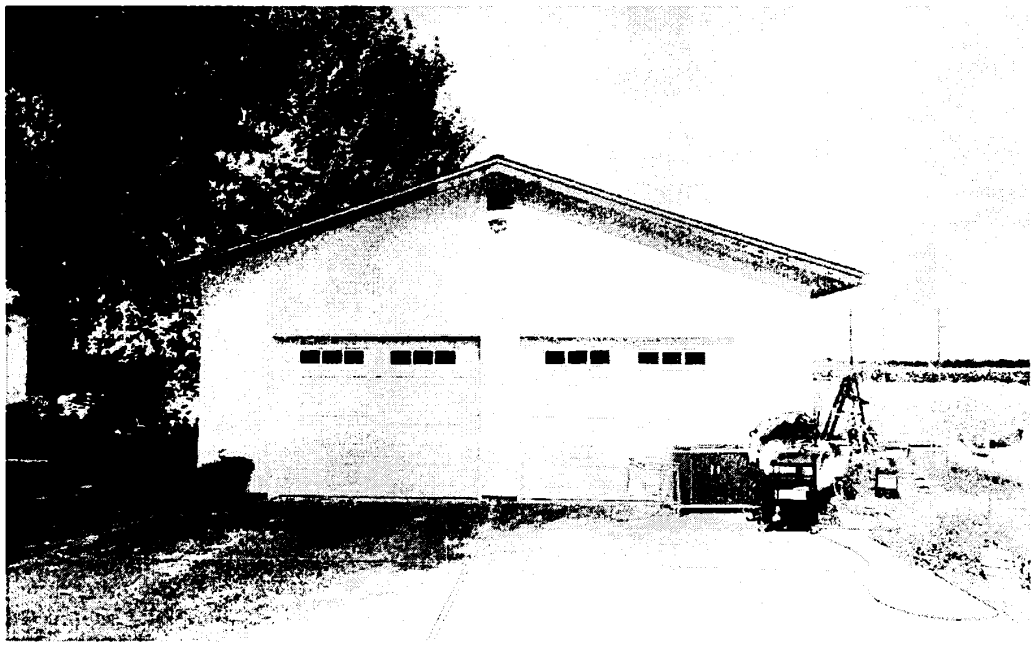


Figure 10 North elevation of the garage. Camera facing south, September 9, 2025.

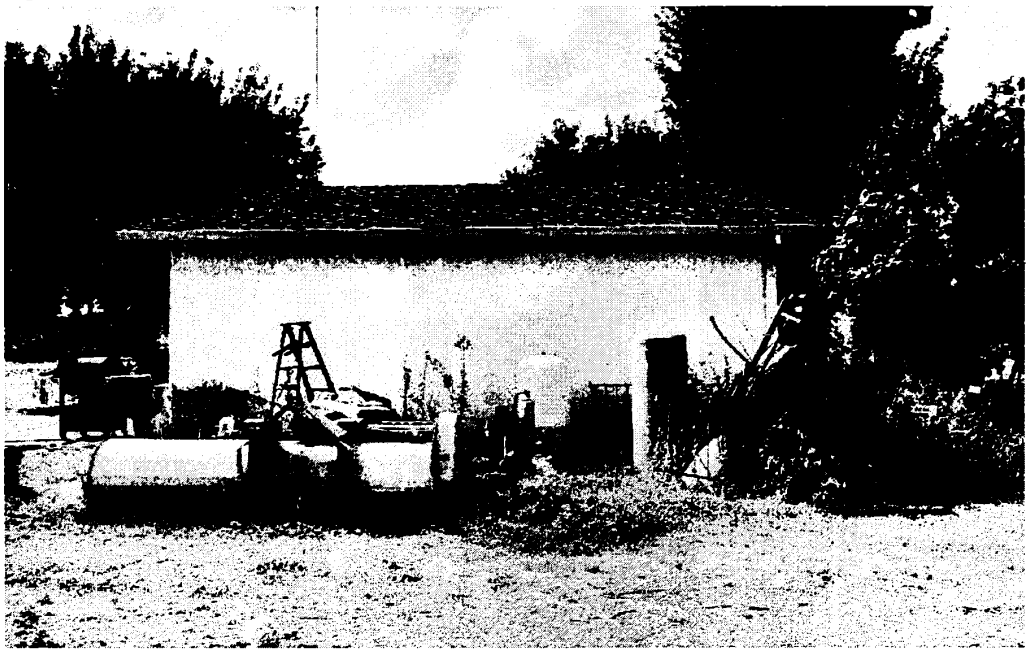


Figure 11 South elevation of the garage, showing side entrance. Camera facing north, September 9, 2025.

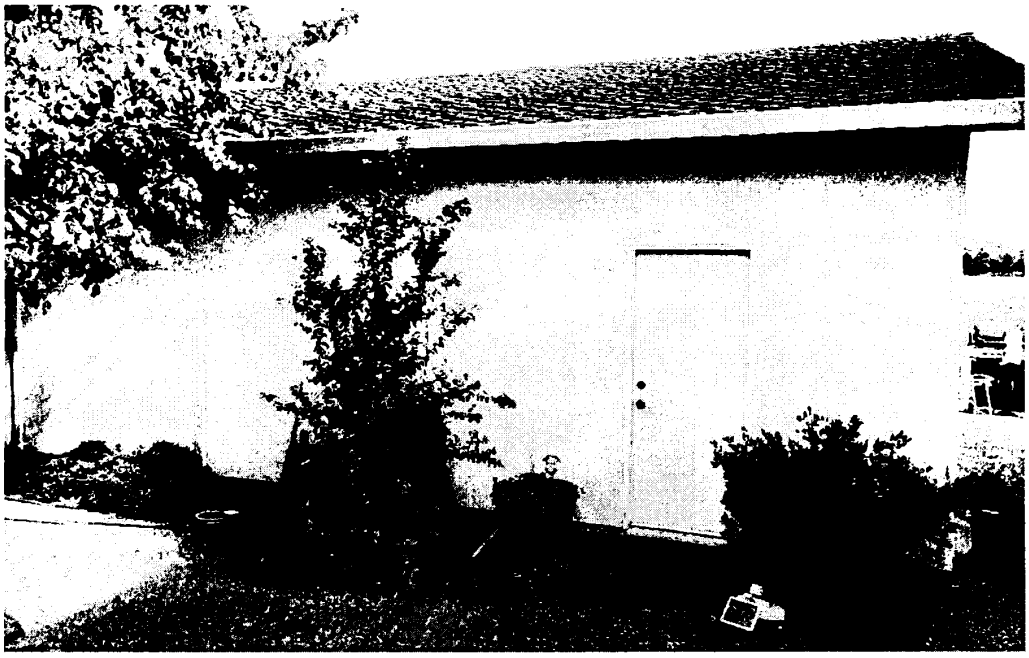


Figure 12 Rear of the garage. Camera facing southeast, September 9, 2025.

Figure 13 Primary, west façade and south end of the barn at 18133 East Comstock Road. Camera facing northeast, September 9, 2025.

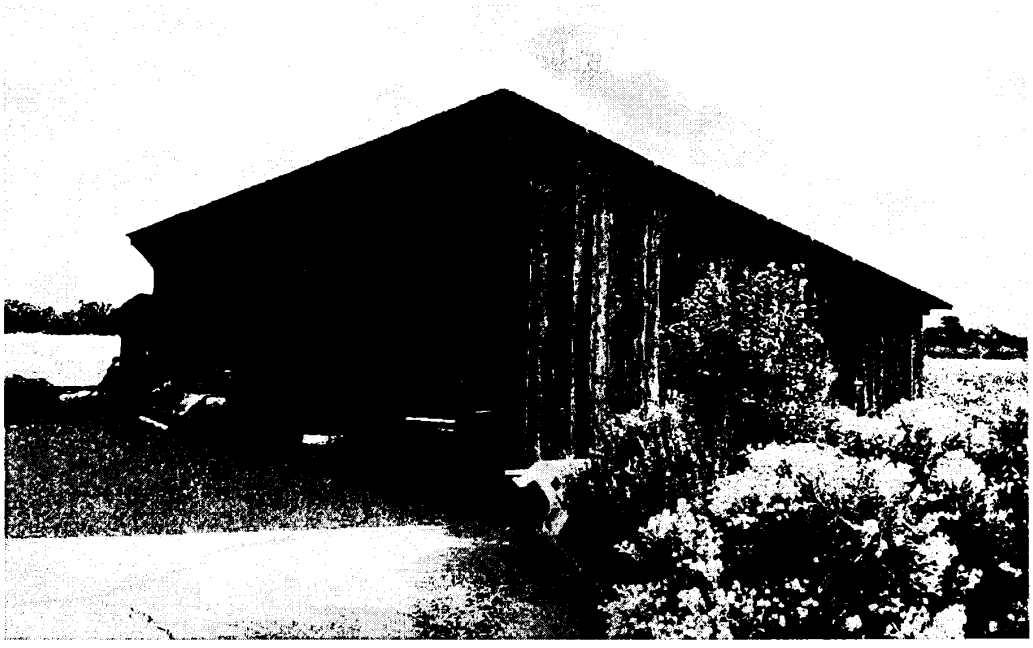


Figure 14 North end of the barn, showing side wing. Camera facing southeast, September 9, 2025.

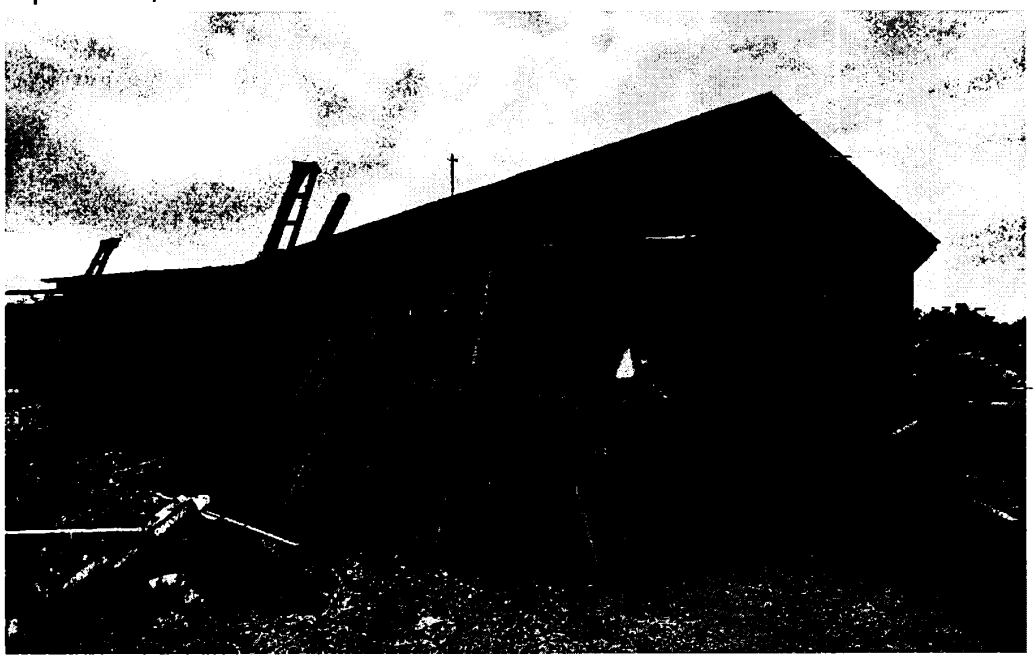
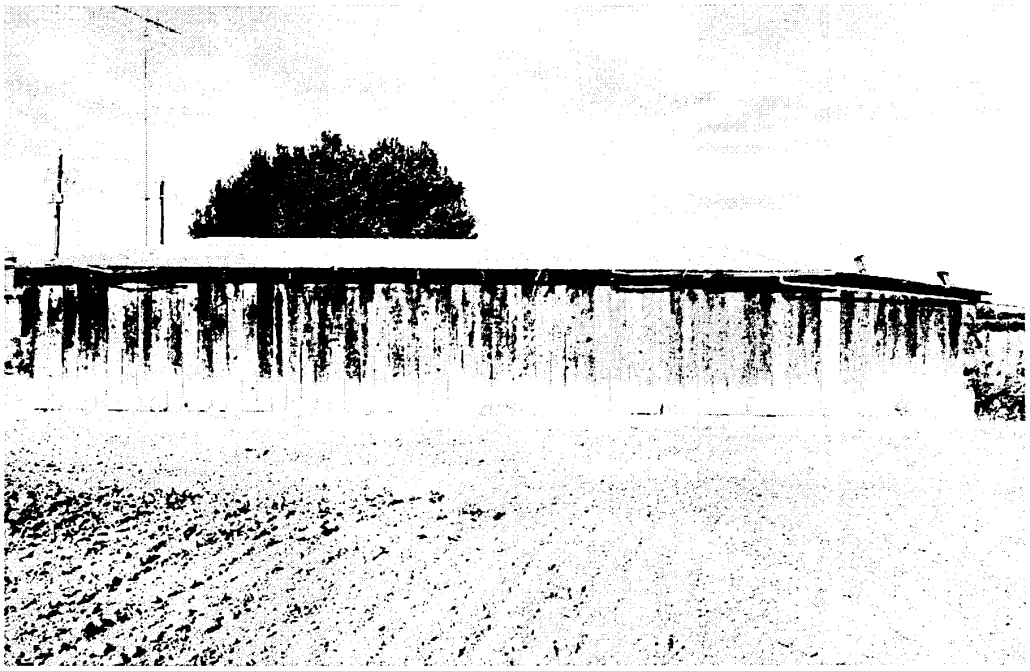


Figure 15 Rear, east elevation of the barn. Camera facing west, September 9, 2025.



5.5.2 Archaeological Survey

The following section summarizes the results of the archaeological field survey.

Ground visibility was excellent (approximately 90 percent). The parcel was recently plowed, and the soil consisted of a light brown to dark brown loam (Figure 16). Vegetation observed consisted of nonnative weeds remaining after the plow and walnut trees sparsely at the edge of the property. Ground disturbance is further evidenced by the presence of irrigation piping throughout the property. Discussion with the owner indicates that the property was previously a walnut orchard. No archaeological resources were identified during the field survey.

Figure 16 Overview of the APE. Camera facing southwest, September 9, 2025.

5.6 Evaluation

18133 East Comstock Road was recorded and evaluated for NRHP and CRHR eligibility on DPR series forms, which are included in Appendix D and summarized below.

5.6.1 18133 East Comstock Road

Property History

18133 East Comstock Road has served as a residential and agricultural property since at least the 1940s. Based on San Joaquin County Assessor data, historical mapping, and aerial photographs reviewed during research, the subject property was developed with its present structures beginning in the late 1940s. The residence was erected in 1948, the barn was constructed between 1948 and

1957, and the garage was built at an undetermined date between 1972 and 1984 (NETR Online 1941, 1957, 1968, 1984; ParcelQuest 2025; UCSB 1972). The residence was reroofed in 2003 and altered with replacement fenestration and application of textured stucco siding at unknown dates (San Joaquin County 2003).

See Section 5.4 for additional details regarding the development timeline of 18133 East Comstock Road.

Occupancy History

Louis and Jeanette Barbagelta, the current owners of 18133 East Comstock Road, have owned the property since 1972 (Ancestry 2020; ParcelQuest 2025). Very little information about the Barbageltas was identified through relevant keyword searches on Ancestry.com, Newspapers.com, Internet Archive, and another online repositories. No other historic-era owners were identified during research (Ancestry 2025; Internet Archive 2025; Newspapers.com 2025; CDNC 2025).

Architecture

The residence and garage at 18133 East Comstock Road display some modest elements of the Ranch architectural style that was popular throughout California during the mid-twentieth century. Appearing first as custom single-family home builds, the Ranch style emerged in 1920s California thanks to the work of Cliff May, a San Diego designer who developed a distinct aesthetic centered around the informal single story open floor plan. In the years following World War II, developers began to favor the style for application to mass produced suburban communities, and the modernist hacienda inspired aesthetics became synonymous with midcentury subdivisions, neighborhoods, and planned communities. Around 1945, the style was adapted to commercial and institutional functions such as motels, gas stations, supermarkets, churches, civic buildings, and schools. Circa 1975, the Ranch style's popularity declined due to a scarcity of expansive buildable land resulting from the previous decade's suburbanization of many areas and a growing desire for more formal and traditional styles (LA City Planning 2015; McAllester 2015). The character-defining features of the style are bulleted below.

- Often one level with an open floor plan
- Use of natural materials such as stone, wood, stucco, and/or brick siding
- Rectangular, U, or L shaped
- Low-pitched asymmetrical roofs
- Large picture windows

The barn on the property exhibits a utilitarian design, emphasizing function over form. Its construction reflects a pragmatic approach, characterized by the use of locally sourced materials and straightforward building techniques. Lacking ornamentation or adherence to a specific architectural style, the barn's design underscores its purpose-driven nature, prioritizing economy and efficiency over aesthetic distinction.

Architect/Builder

Research through targeted searches on Newspapers.com, Internet Archive, and another online repositories did not confirm the specific architect(s) or builder(s) associated with the buildings present 18133 East Comstock Road (Internet Archive 2025; Newspapers.com 2025; CDNC 2025).

Evaluation

18133 East Comstock Road was recorded and evaluated for listing in the NRHP and CRHR and is recommended ineligible for both registers due to lack of historical and architectural significance.

Developed during the mid-twentieth century, 18133 East Comstock Road is a former agricultural property that historically produced walnuts. According to *A Historical Context and Methodology for Evaluating Agricultural Properties in California*: "...there must be a direct and important connection between the property and the area of significance, established through documentation and physical evidence. In addition, rarity of the resource should be considered. There are many agricultural resources in California that may be associated with a specific theme but not all are eligible" (Agricultural HARD Team and California Department of Transportation 2023: 332). Research did not identify the property significantly contributed to the agricultural development of San Joaquin County. The property was one of many similar agricultural properties in the county; it was not the first agricultural property; it did not have the highest yields of produce; nor was it the site of a technological advancement in walnut farming practices. Therefore, the property is recommended ineligible for listing in the NRHP and CRHR under Criteria A/1.

The original owner/occupant of 18133 East Comstock Road is undetermined. Little specific information regarding Louis and Jeanette Barbagelta was identified as part of the current study, and research did not indicate that either individual made contributions within the context of local, state, or national history would warrant inclusion of the subject property in any register. There is no demonstrable evidence that any other owners or occupants made notable contributions to history at the local, state, or national level. The property is, therefore, recommended ineligible under Criteria B/2.

The extant historic-period buildings that comprise 18133 East Comstock Road were constructed at various dates during the mid-twentieth century. The residence and garage are a simple expressions of Ranch-style architecture expressed through their massing and limited detailing. However, neither building is an excellent example of the style, which is well represented throughout the region. Further, both buildings have been substantially altered with replacement fenestration and roofing and modern textured stucco siding. The utilitarian barn on the property is likewise not exemplary for its design. It does not adhere to an identifiable architectural style, type, period, or construction method, and its overall simplicity lacks distinction or high artistic value. Research through targeted searches on Ancestry.com, Newspapers.com., Internet Archive, and other online databases did not reveal the original architect or builder of any of residence, garage, or barn. Therefore, the subject property is recommended ineligible under Criterion C/3.

The property is not likely to yield valuable information that will contribute to our understanding of human history because the property is not and never was the principal source of important information pertaining to subjects such as twentieth century agricultural properties in San Joaquin County. Therefore, the property is recommended ineligible for listing in the NRHP and CRHR under Criteria D/4.

In conclusion, 18133 East Comstock Road is recommended ineligible for listing in the NRHP and CRHR due to lack of historical and architectural significance and is not a historical resource as defined by CEQA Section 15064.5(a) or historic property as defined by 36 CFR 800.16(l)(1).

6 Conclusions and Recommendations

The following sections present our recommended findings under Section 106 of the NHPA and CEQA.

Based on the results of a cultural resources records search, field survey, NAHC SLF search, interested parties outreach, geoarchaeological review and sensitivity assessment, and ineligible NRHP and CRHR evaluations of 18133 East Comstock Road, there are no historic properties within the APE as defined by 36 CFR 800.16(l)(1) or historical resources as defined by CEQA Section 15064.5(a). No archaeological resources are known within the APE, and although the archaeological sensitivity analysis identified moderate to high potential for subsurface archaeological deposits, there is no evidence that an archaeological resource exists within the APE.

6.1.1 Section 106 of the National Historic Preservation Act

Based on the results of this study, Rincon recommends a finding of ***no historic properties affected*** under Section 106 of the NHPA for the current undertaking. However, based on sensitivity for the area, Rincon recommends measures for a Worker's Environmental Awareness Program, archaeological monitoring, and unanticipated discoveries during construction, detailed below. In the event of a post review discovery during ground disturbance associated with the undertaking, the procedures under 36 CFR Part 800.13 should be followed by the lead federal agency.

6.1.2 CEQA

The impact analysis included here is organized based on the cultural resources thresholds included in *CEQA Guidelines* Appendix G: Environmental Checklist Form:

A. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?
B. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?
C. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Threshold A broadly refers to historical resources. To more clearly differentiate between archaeological and built environment resources, we have chosen to limit analysis under Threshold A to built environment resources. Archaeological resources, including those that may be considered historical resources pursuant to Section 15064.5 and those that may be considered unique archaeological resources pursuant to Section 21083.2, are considered under Threshold B.

Historical Built Environment Resources

This study identified one built environment resource in the APE, 18133 East Comstock Road, and recommends it ineligible for listing in the NRHP and CRHR. The resource, therefore, does not qualify as a historical resource under CEQA. Based on the results of this study, Rincon recommends a finding of ***no impact to historical resources***.

Historical and Unique Archaeological Resources

This study did not identify any archaeological resources or archaeological deposits in the APE and has identified the APE as having high archaeological sensitivity for pre-contact archaeological deposits and moderate sensitivity for post-contact archaeological deposits. Unanticipated discoveries during construction remain a possibility. Rincon recommends the following mitigation measures for a Worker's Environmental Awareness Program, archaeological monitoring, and unanticipated discoveries during construction. With adherence to these measures, Rincon recommends a finding of ***less than significant impact with mitigation for archaeological resources*** under CEQA.

Workers Environmental Awareness Program

Rincon recommends a Worker's Environmental Awareness Program (WEAP) be conducted for all project personnel working in the APE prior to the commencement of project activities. The WEAP shall be prepared and conducted under the direction of a qualified archaeologist who meets the Secretary of the Interior's *Professional Qualifications Standards* for archaeology (NPS 1983). The WEAP training shall include a description of the types of cultural material that may be encountered, cultural sensitivity issues, the regulatory environment, and the proper protocol for treatment of the materials in the event of a find.

Archaeological Monitoring

Rincon recommends archaeological monitoring of all project-related ground-disturbing activities. Archaeological monitoring shall be performed under the direction of an archaeologist meeting the Secretary of the Interior's *Professional Qualifications Standards* for archaeology (NPS 1983). Monitor will have the authority to halt and redirect work should any cultural resources be identified during monitoring. Archaeological monitoring may be reduced to spot-checking or eliminated at the discretion of the monitors, in consultation with the lead agency, as warranted by conditions such as encountering bedrock, sediments being excavated are fill, or negative findings during the first 20 percent of grading within sensitive sediments or soils. If monitoring is reduced to spot-checking, spot checks shall occur when ground-disturbance moves to a new location within the APE and when ground disturbance will extend to depths not previously reached (unless those depths are in bedrock).

Unanticipated Discovery of Cultural Resources

In the event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the find shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (NPS 1983) shall be contacted immediately to evaluate the resource. If the resource is determined by the qualified archaeologist to be prehistoric, then a Native American representative shall also be contacted to participate in the evaluation of the resource. If the qualified archaeologist and/or Native American representative determines it to be appropriate, archaeological testing for CRHR eligibility shall be completed. If the resource proves to be eligible for the CRHR and significant impacts to the resource cannot be avoided via project redesign, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of the California Code of Regulations (CCR) Guidelines Section 15126.4(b)(3)(C). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to cultural resources related to the resource. Pursuant to the data recovery plan, the

qualified archaeologist and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. The County shall review and approve the treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the California Historical Resources Information System, per CCR Guidelines Section 15126.4(b)(3)(C).

Human Remains

No human remains are known to be present in the APE. However, the discovery of human remains is a possibility during ground disturbing activities. If human remains are found, California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the Native American Heritage Commission, which will determine and notify a MLD. The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance. With adherence to existing regulations, Rincon recommends a finding of ***less-than-significant impact to human remains*** under CEQA.

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CENTRAL CALIFORNIA INFORMATION CENTER
California Historical Resources Information System
Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307

Alpine, Calaveras, Mariposa, Merced, Mono, San Joaquin, Stanislaus & Tuolumne Counties

Date: 8/19/2025

Records Search File No.: 13459L
Project: Duncan Road Solar Development Project (Rincon No. 25-17912)
18133 East Comstock Road, Linden, CA

Laura Maldonado
Rincon Consultants, Inc.
180 N. Ashwood Avenue
Ventura, CA 93003
805-644-4455

Invoice to: ap@rinconconsultants.com

lmaldonado@rinconconsultants.com

The Central California Information Center received your record search request for the project area referenced above, located on the Linden 7.5' quadrangle in San Joaquin County. The following reflects the results of the records search for the project study area and radius:

As per data currently available at the CCaIC, the locations of resources/reports are provided in the following format: ☐ custom GIS maps ☐ GIS Data/shape files **NO DATA TO REPORT**

Summary Data:

Resources within the project area:	None formally reported to the Information Center.
Resources within the 1/2-mile radius:	None formally reported to the Information Center.
Reports within the project area:	None formally reported to the Information Center.
Reports within the 1/2-mile radius:	None formally reported to the Information Center.

Resource Database Printout (list):	☐ enclosed	☐ not requested	☒ nothing listed
Resource Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☐ enclosed	☐ not requested	☒ nothing listed
Report Database Printout (details):	☐ enclosed	☒ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☐ enclosed	☐ not requested	☒ nothing listed
Report Copies:	☐ enclosed	☐ not requested	☒ nothing listed

OHP Historic Properties Directory: New Excel File: Built Environment Resource Directory (BERD) Dated 09/23/2022

Not all resources listed in the BERD are mapped in GIS, nor do we have records on file for; if you identify additional resources in the BERD that you need copies of, contact the IC.

☐ enclosed ☐ not requested ☒ nothing listed

Archaeological Determinations of Eligibility: (ARD Excerpt):

☐ enclosed ☐ not requested ☒ nothing listed

CA Inventory of Historic Resources (1976): ☐ enclosed ☒ not requested ☐ nothing listed

Caltrans Bridge Survey: ☐ enclosed ☒ not requested ☐ nothing listed

Ethnographic Information: ☐ enclosed ☒ not requested ☐ nothing listed

Historical Literature: ☐ enclosed ☒ not requested ☐ nothing listed

Historical Maps: ☐ enclosed ☒ not requested ☐ nothing listed

See also: http://ngmdb.usgs.gov>topoview

Local Inventories: ☐ enclosed ☒ not requested ☐ nothing listed

GLO and/or Rancho Plat Maps: ☐ enclosed ☒ not requested ☐ nothing listed

See also: https://glorecords.blm.gov

Shipwreck Inventory: ☒ not available at CCaIC; please go to http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp

Soil Survey Maps: ☒ not available at CCaIC; please go to

http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search

area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Note: Billing will be transmitted separately via email by our Financial Services office* ($150.00), payable within 60 days of receipt of the invoice.

If you wish to include payment by Credit Card, you must wait to receive the official invoice from Financial Services so that you can reference the CMP # (Invoice Number), and then contact the link below:

https://commerce.cashnet.com/ANTHROPOLOGY

Sincerely,

E. A. Greathouse

E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System

* Invoice Request sent to: ARBilling@csustan.edu, CSU Stanislaus Financial Services

STATE OF CALIFORNIA — Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
REGINALD PAGALING
CHUMASH

VICE-CHAIRPERSON
BUFFY MCQUILLEN
YOKAYO POMO, YUKI, NOMLAKI

SECRETARY
ISAAC BOJORQUEZ
OHLONE-COSTANOAN

PARLIAMENTARIAN
WAYNE NELSON
LUISEÑO

COMMISSIONER
SARA DUTSCHKE
MIWOK

COMMISSIONER
STANLEY RODRIGUEZ
KUMEYAAY

COMMISSIONER
BENNAE CALAC
PAUMA-YUIMA BAND OF LUISEÑO INDIANS

COMMISSIONER
VACANT

COMMISSIONER
VACANT

ACTING EXECUTIVE SECRETARY
MICHELLE CARR

NAHC HEADQUARTERS
1550 HARBOR BOULEVARD
SUITE 100
WEST SACRAMENTO,
CALIFORNIA 95691
(916) 373-3710
NAHC@NAHC.CA.GOV

August 21, 2025

Laura Maldonado
Rincon Consultants

Submitted via Electronic
Via Email to: **lmaldonado@rinconconsultants.com**

Re: Duncan Road Solar Development Project, San Joaquin County

To Whom It May Concern:

As requested, a search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed based on information submitted for the above referenced project. The results were negative. Be aware that tribes do not always record their sacred sites in the SLF, nor are they required to do so. As such, an SLF search is not a substitute for consultation with all tribes that are traditionally and culturally affiliated with a project's geographic area.

Attached is a list of Native American tribes that are traditionally and culturally affiliated with the project's geographic area. Please contact all of the listed tribes as they may have information about sacred sites within the project area that is not listed with the NAHC.

If within two weeks of notification, a response has not been received, the Commission requests that you follow up with a telephone call or email to ensure that the project information was received.

If you receive notification of a change of address or phone number from a tribe, please inform the NAHC so that we can assure that our lists contain current information.

In addition to engaging in tribal consultation, you should consult the appropriate regional California Historical Research Information System (CHRIS) information center to determine whether it has information regarding the presence of recorded archaeological sites within the project area.

If you have any questions or need additional information, please contact me at: Pricilla.Torres-Fuentes@nahc.ca.gov.

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
San Joaquin County
8/21/2025

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
San Joaquin	Amah Mutsun Tribal Band	N	Valentin Lopez, Chairperson	P.O. Box 5272 Galt, CA, 95632	(916) 743-5833		vjtestingcenter@aol.com	Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Monterey,San Benito,San Francisco,San	7/20/2023
	Amah Mutsun Tribal Band	N	Ed Ketchum, Vice-Chairperson		(530) 578-3864		uerieways@aol.com	Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Monte	7/20/2023
	Northern Valley Yokut / Ohlone Tribe	N	Katherine Perez, Chairperson	P.O. Box 717 Linden, CA, 95236	(209) 849-8972		canutes@verizon.net	Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Sacramento,San Benito,San Joaquin,Santa	4/30/2024
	Northern Valley Yokut / Ohlone Tribe	N	Timothy Perez, Tribal Compliance Officer	P.O. Box 717 Linden, CA, 95236	(209) 662-2788		huskanam@gmail.com	Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Sacramento,San Benito,San Joaquin,Santa	11/21/2023
	Tule River Indian Tribe	F	Felix Christman, THPO	340 North Reservation Road Porterville, CA, 93257	(559) 719-0420		felix.christman@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	8/12/2025
	Tule River Indian Tribe	F	Kerri Vera, Environmental Department	340 North Reservation Road Porterville, CA, 93258	(559) 783-8892	(559) 783-8932	kerri.vera@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	8/12/2025
	Wilton Rancheria	F	Steven Hutchason, Tribal Historic Preservation Officer	9728 Kent Street Elk Grove, CA, 95624	(916) 683-6000		shutchason@wiltonrancheria-nsn.gov	Nisenan Miwok	Alameda,Alpine,Amador,Contra Costa,El Dorado,Mono,Nevada,Placer,Sacramento,San Joaquin,Solano,Stanislaus,Sutter,Yolo,Yuba	2/12/2025
	Wilton Rancheria	F	Cultural Preservation Department,	9728 Kent Sheet Elk Grove, CA, 95624	(916) 313-4493		cpd@wiltonrancheria-nsn.gov	Nisenan Miwok	Alameda,Alpine,Amador,Contra Costa,El Dorado,Mono,Nevada,Placer,Sacramento,San Joaquin,Solano,Stanislaus,Sutter,Yolo,Yuba	2/12/2025
	Wilton Rancheria	F	Michelle St. Clair, Executive Director of Cultural Preservation	9728 Kent Street Elk Grove, CA, 95624	(916) 683-6000		mstclair@wiltonrancheria-nsn.gov	Nisenan Miwok	Alameda,Alpine,Amador,Contra Costa,El Dorado,Mono,Nevada,Placer,Sacramento,San Joaquin,Solano,Stanislaus,Sutter,Yolo,Yuba	2/12/2025

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Duncan Road Solar Development Project, San Joaquin County.

Record: PROJ-2025-004884
Report Type: List of Tribes
Counties: San Joaquin
NAHC Group: All

Local Interested Parties Outreach Documentation

Interested Party Contact	Rincon Coordination Efforts	Response to Coordination Efforts
San Joaquin County Historical Museum P.O. Box 30 Lodi, California 95241-0030 Via-email: info@sanjoaquinhistory.org	Email Sent by Michelle Anderson on September 2, 2025	Email delivery receipt received on September 2, 2025. Phillip E. Merlo, Executive Director of the San Joaquin County Historical Museum, responded on September 2, 2025m stating that there are no known points of historical significance associated with the project site. Michelle Anderson responded to Mr. Merlo on September 2, 2025, thanking him for his response.

Rincon Consultants, Inc.
601 University Avenue, Suite 221
Sacramento, California 95825
916-706-1374

September 2, 2025
Project No: 25-17912

San Joaquin County Historical Museum
P.O. Box 30
Lodi, California 95241-0030
Via email: info@sanjoaquinhistory.org

Subject: Duncan Road Solar Development Project, Interested Party Outreach
18133 East Comstock Road, Linden, California 95236

To whom it may concern:

Rincon Consultants, Inc. (Rincon) has been retained to perform a cultural resources study for the Duncan Road Solar Development Project (project), located on a single parcel totaling approximately 15 acres at 18133 East Comstock Road in Linden, San Joaquin County, California. The project is subject to the California Environmental Quality Act (CEQA). Rincon understands that the project may also utilize United States Department of Agriculture funding, which would require compliance with Section 106 of the National Historic Preservation Act.

As a component of the cultural resources study, Rincon is consulting interested parties to request information on potential or known historic properties or other cultural resources in the project area or vicinity. Rincon is currently working to identify any potential cultural resource issues associated with the proposed project. If you or your organization have any knowledge of, or specific concerns regarding cultural resources in the project area, please respond by telephone at 916-382-2997 or by email to mvanderson@rinconconsultants.com. Thank you for your assistance.

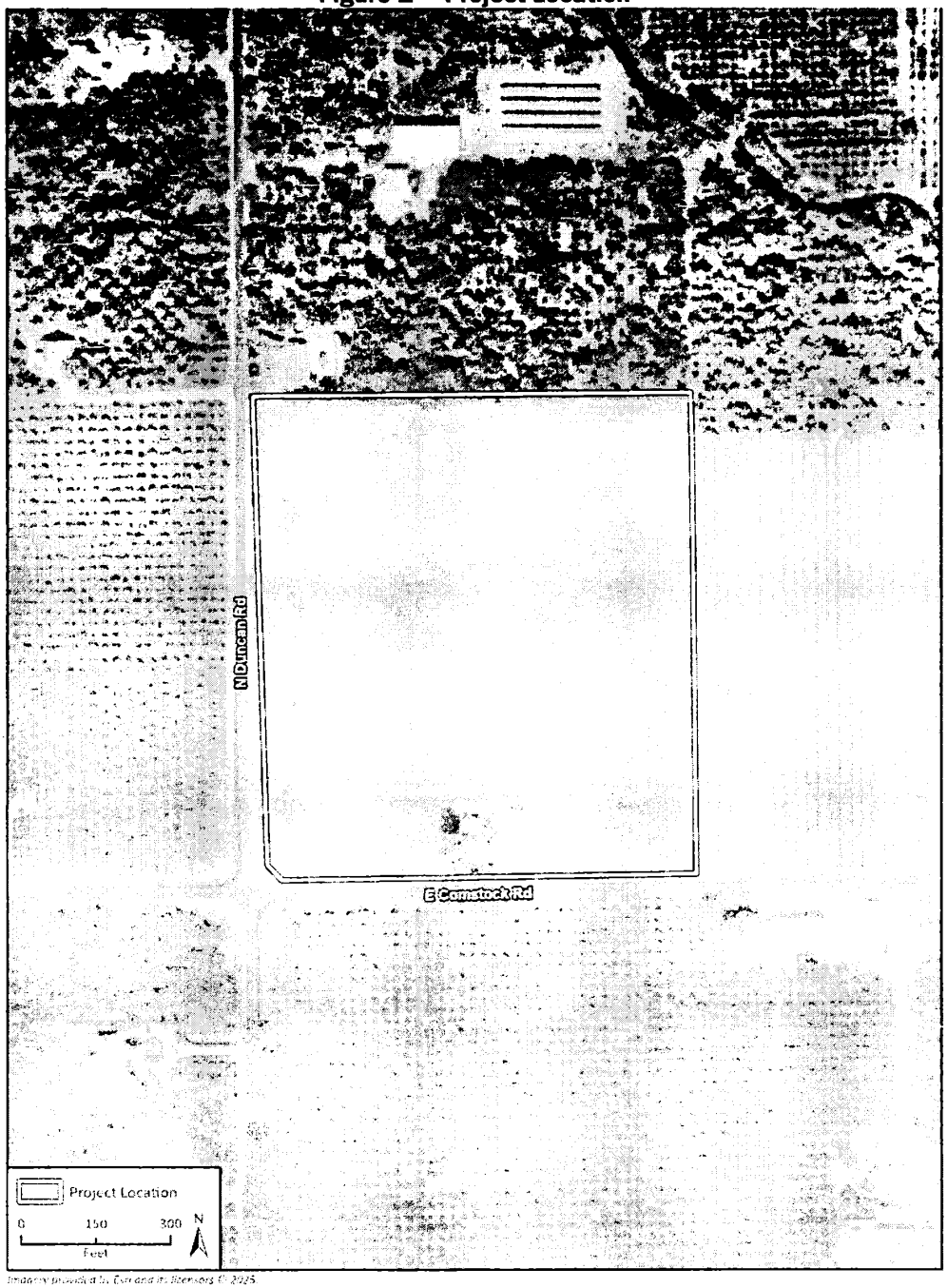
Sincerely,
Rincon Consultants, Inc.

Michelle Anderson

Michelle Anderson, M.A.
Project Manager, Architectural Historian

Attachments
Figure 1 Project Location

Figure 1 Project Location



Michelle Anderson

From: Michelle Anderson
Sent: Tuesday, September 2, 2025 10:48 AM
To: info@sanjoaquinhistory.org
Cc: Elaine Haynes; Hannah Haas
Subject: Duncan Road Solar Development Project - Interested Party Outreach
Attachments: Duncan Road Solar Development Project-Outreach Letter.pdf

Tracking:

Recipient	Delivery	Read
info@sanjoaquinhistory.org		
Elaine Haynes	Delivered: 9/2/2025 10:48 AM	
Hannah Haas	Delivered: 9/2/2025 10:48 AM	Read: 9/2/2025 10:51 AM

Good morning,

Rincon Consultants, Inc. has been retained to perform a cultural resources study for the Duncan Road Solar Development Project (project), located on a single parcel totaling approximately 15 acres at 18133 East Comstock Road in Linden, San Joaquin County, California. Please review the attached letter for additional information. As a component of the study, Rincon is reaching out to interested parties to request information on potential or known historic properties or other cultural resources in the project area or vicinity.

Please respond to this email with comments and concerns, or if you have any questions regarding the project.

Regards,

RINCON

Michelle Anderson
Architectural Historian | Project Manager
mvanderson@rinconconsultants.com
805-644-4455 Main | 916-382-2997 Direct

Out of Office Alert: 9/5 (Rincon Annual Meeting) and 10/16-10/20

Michelle Anderson

From: postmaster@sanjoaquinhistory.org
Sent: Tuesday, September 2, 2025 10:48 AM
To: Michelle Anderson
Subject: [EXT] Delivered: Duncan Road Solar Development Project - Interested Party Outreach
Attachments: Delivered: Duncan Road Solar Development Project - Interested Party Outreach

Michelle Anderson

From: Phillip Merlo <p.merlo@sanjoaquinhistory.org>
Sent: Tuesday, September 2, 2025 2:09 PM
To: Michelle Anderson; Info SJHSM
Cc: Elaine Haynes; Hannah Haas
Subject: [EXT] Re: Duncan Road Solar Development Project - Interested Party Outreach

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Michelle,

There are no known points of historical significance associated with the site.

Best,
Phillip

Phillip E. Merlo
Executive Director
San Joaquin County Historical Museum

(209) 331-2055
11793 N. Micke Grove Road, Lodi, CA 95240
www.sanjoaquinhistory.org

Follow us on:

The San Joaquin County Historical Society & Museum engages and inspires people and communities by preserving and showcasing the agricultural innovation, ingenuity, and diverse histories of our county.

From: Michelle Anderson <mvanderson@rinconconsultants.com>
Sent: Tuesday, September 2, 2025 10:47 AM
To: Info SJHSM <Info@sanjoaquinhistory.org>
Cc: Elaine Haynes <ehaynes@rinconconsultants.com>; Hannah Haas <hhaas@rinconconsultants.com>
Subject: Duncan Road Solar Development Project - Interested Party Outreach

Good morning,

Rincon Consultants, Inc. has been retained to perform a cultural resources study for the Duncan Road Solar Development Project (project), located on a single parcel totaling approximately 15 acres at 18133 East Comstock

Road in Linden, San Joaquin County, California. Please review the attached letter for additional information. As a component of the study, Rincon is reaching out to interested parties to request information on potential or known historic properties or other cultural resources in the project area or vicinity.

Please respond to this email with comments and concerns, or if you have any questions regarding the project.

Regards,

RINCON

Michelle Anderson
Architectural Historian | Project Manager
mvanderson@rinconconsultants.com
805-644-4455 Main | 916-382-2997 Direct

Out of Office Alert: 9/5 (Rincon Annual Meeting) and 10/16-10/20

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

***Resource Name or #:** 18133 East Comstock Road

P1. Other Identifier: N/A

*P2. Location: ■ Unrestricted *a. County: San Joaquin and

*b. USGS 7.5' Quad: *Linden, California* Date: 1968 (rev. 1993)T 2N; R 8E; Section(s) 3; M.D.B.M.

c. Address: 18133 East Comstock Road City: Linden Zip: 95236

d. UTM: Zone: 10S 667200 mE / 4212531 mN e. Other Locational Data: APN: 091-170-060

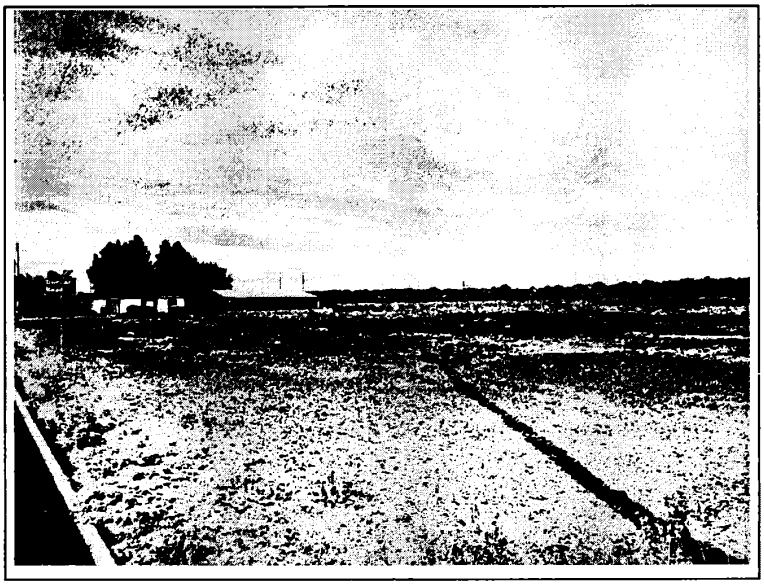
*P3a. Description:

18133 East Comstock Road in Linden, San Joaquin County, California (P5a. Photograph 1) is an approximately 20-acre agricultural property located at the intersection of Comstock Road and Duncan Road. It is developed with historic-age buildings, including a single-family residence, a detached garage, and a storage barn. The buildings are positioned at the south end of the property and are accessed from a driveway fronting Comstock Road. The majority of the parcel was formerly planted as a walnut orchard. Aerial photographs reviewed during research indicate that the orchard trees were removed between 2023 and 2025 (Google Earth 2023) (see Continuation Sheets).

*P3b. Resource Attributes: HP2. Single-Family Property; HP4: Ancillary Building; HP33: Farm/Ranch

*P4. Resources Present: ■Building

P5a. Photograph 1



P5b. Description of Photo: Overview of 18133 East Comstock Road, showing the residence and barn at the left side of the frame. Camera facing northwest, September 9, 2025.

*P6. Date Constructed/Age and Sources:
■Historic
1948 (ParcelQuest 2025)

*P7. Owner and Address:
Louis and Jeanette Barbagelta
18133 East Comstock Road
Linden, CA 95236

*P8. Recorded by:
Michelle Anderson, MA
Rincon Consultants, Inc.
601 University Avenue, Suite 221
Sacramento, CA 95825

*P9. Date Recorded:
September 9, 2025

*P10. Survey Type:
Intensive

*P11. Report Citation:

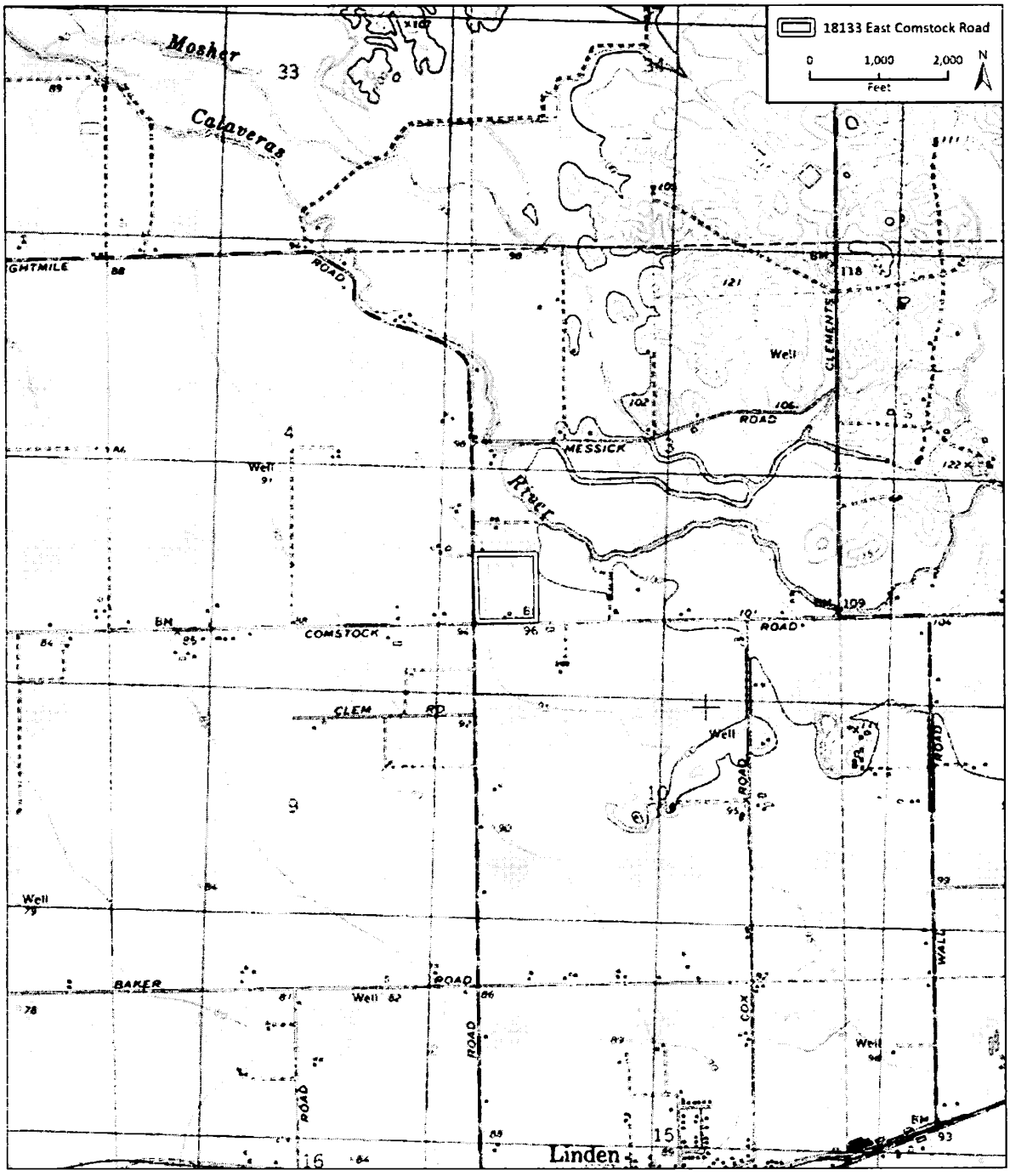
Anderson, M., E. Haynes, H. Haas, N. Jordan, and M. Nayyar. *Duncan Road Solar Development Project, San Joaquin County, California*. Rincon Consultants Project No. 25-17912. Report on file at the Central California Information Center, California State University, Stanislaus.

*Attachments: ■Location Map ■Continuation Sheet ■Building, Structure, and Object Record

State of California — The Resources Agency DEPARTMENT OF PARKS AND RECREATION **LOCATION MAP**	Primary # HRI# Trinomial

 ***Resource Name or #:** 18133 East Comstock Road

***Map Name:** *Linden, California* ***Scale:** 1:24,000 ***Date of Map:** 1968 (rev. 1993)



*Required information

B1. Historic Name: N/A
B2. Common Name: N/A
B3. Original Use: Residence; Orchard
B4. Present Use: Residence
*B5. Architectural Style: Ranch; Vernacular; Utilitarian
*B6. Construction History:
Based on San Joaquin County Assessor data, historical mapping, and aerial photographs reviewed during research, the subject property was developed with its present structures beginning in the late 1940s. The residence was erected in 1948, the barn was constructed between 1948 and 1957, and the garage was built at an undetermined date between 1972 and 1984 (NETR Online 1941, 1957, 1968, 1984; ParcelQuest 2025; UCSB 1972). The residence was reroofed in 2003 and altered with replacement fenestration and application of textured stucco siding at unknown dates (San Joaquin County 2003).

*B7. Moved? ■No
*B8. Related Features: None
B9a. Architect: Undetermined
b. Builder: Undetermined
*B10. Significance: Theme: Agriculture
Area: San Joaquin County, California
Period of Significance: 1948-ca. 1980
Property Type: Agriculture; Residential
Applicable Criteria: N/A

Local History

Amid the excitement of the Gold Rush, a wave of settlers poured into San Joaquin County, prompting its official establishment in 1850 as one of California's original 27 counties. That same year, Captain Charles M. Weber founded Stockton, which would grow to become the county's largest city. The rural community of Linden, where the subject parcel is located, was established in 1862 (Lewis Publishing Company 1890).

Over time, San Joaquin County evolved into a thriving agricultural region. In the early years, the county's main agricultural output was grain, with a flour mill active as early as 1854 (Smith 1976). The introduction of railroads through the county also encouraged the growth of the agricultural industry and orchards, as the trains could move products to more markets. The Central Pacific Railroad was constructed in the 1860s from Sacramento to Stockton and west to San Francisco, and in 1909 the Western Pacific Railroad was added to the same line as the Central Pacific Railroad (Davis 1991).

From the late nineteenth to the early twentieth century, agricultural concerns in the area were focused on irrigation, with the Calaveras River and Mormon Slough dammed and diverted for farming near Bellota (*Stockton Evening and Sunday Record* 1935; Smith 1976). When World War II began, California crops fetched a high price, allowing the region to diversify plantings and develop as an area known for beans, walnuts, and cherries, among other crops. The unincorporated areas of San Joaquin County remain rural and agricultural to this day, with some residential and commercial development adjacent to cities in the county. See Continuation Sheets.

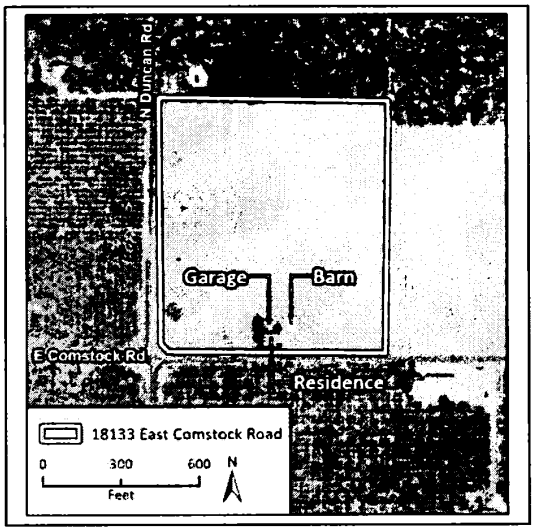
B11. Additional Resource Attributes: None.

*B12. References: See Continuation Sheet.

B13. Remarks: None.

*B14. Evaluator: Michelle Anderson
Rincon Consultants, Inc.
601 University Avenue, Suite 221
Sacramento, California 95825

*Date of Evaluation: October 2025



(This space reserved for official comments.)

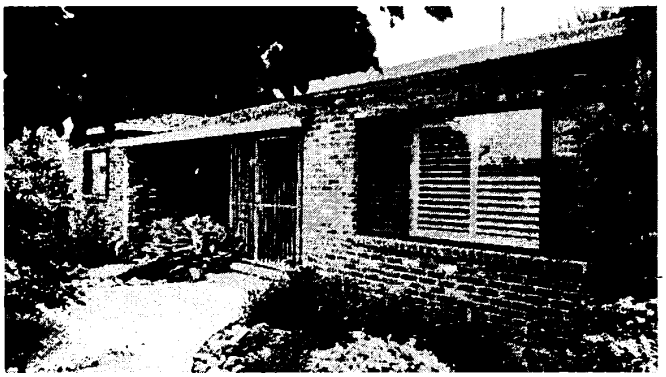
P4. Description (Continued from Page 1):

Residence

The residence at 18133 East Comstock Road is located at the south edge of the property. The building has an irregular footprint set on a concrete foundation. The low-pitch hip roof is covered with modern composition shingles. The exterior cladding consists of brick, grooved plywood, and modern textured stucco. All of the visible windows and doors appear to be modern units.

The main, south elevation of the residence faces East Comstock Road (Photograph 2). The façade is primarily sided with red bricks arranged in a running bond pattern. The entrance to the house is accessed from a recessed porch partially obscured by a metal screen. The exterior wall at the back of the porch is clad with vertically grooved plywood panels. Three modern windows with anodized metal frames fenestrate the south elevation.

The sides and rear of the of the residence are coated with modern textured stucco and are fenestrated with modern anodized metal-frame windows (Photograph 3 through Photograph 6). A chimney sided with grooved plywood paneling adjoins the east elevation near the southeast corner of the building.



Photograph 2: Primary, south façade of the residence at 18133 East Comstock Road. Camera facing northwest, September 9, 2025.

Photograph 3: East elevation of the residence. Camera facing west, September 9, 2025.

Photograph 4: Northeast corner of the residence. Camera facing southwest, September 9, 2025.

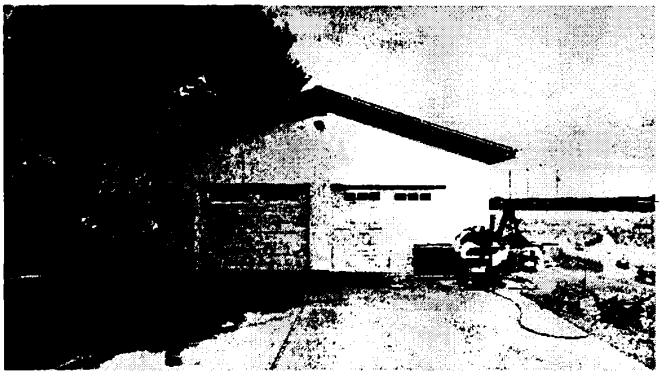
Photograph 5: West elevation of the residence. Camera facing east, September 9, 2025.

Photograph 6: Rear of the residence, viewed from the northwest corner. Camera facing southeast, September 9, 2025.

Garage

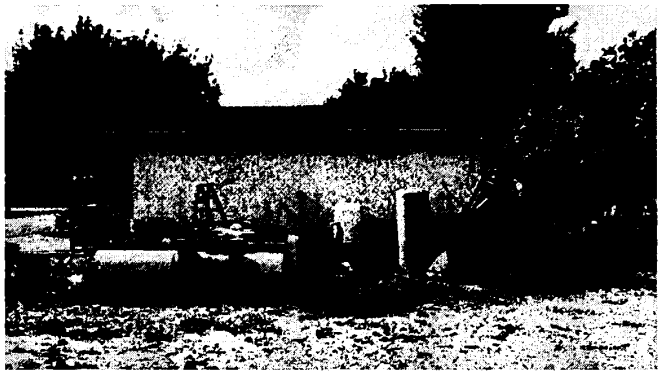
The garage is sited directly north of the residence. This rectangular-plan ancillary building sits on a concrete foundation and is topped by a gable roof with overhanging eaves. The roofing material is modern composition shingles. Similar to the residence exterior of walls of the garage are clad with modern textured stucco. The primary gable end of the garage faces east and features

two vehicle bays fitted with modern overhead doors (Photograph 7). A small, rectangular vent fenestrates the gable peak. The side elevations largely lack ornamentation or fenestration save for a secondary entrance with a modern metal door on the south side (Photograph 8 and Photograph 9), The rear, west gable end of the garage is fenestrated with a modern sliding window and rectangular gable vent (Photograph 10).



Photograph 7: Primary, east façade of the garage at 18133 East Comstock Road. Camera facing west, September 9, 2025.

Photograph 8: South elevation of the garage, showing side entrance. Camera facing north, September 9, 2025.

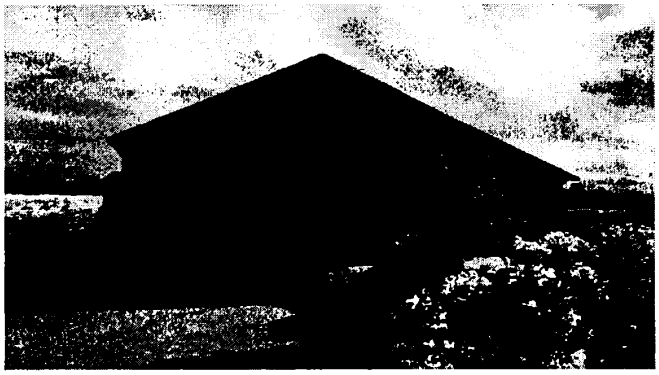


Photograph 9: North elevation of the garage. Camera facing south, September 9, 2025.

Photograph 10: Rear of the garage. Camera facing southeast, September 9, 2025.

Barn

The wood-frame barn is positioned northeast of the residence (Photograph 11 through Photograph 13). The barn has a rectangular footprint and a shed roof sheathed with corrugated metal panels. The exterior walls are comprised of vertical wood boards. The primary, west façade includes several open storage bays. Four bays separated by wood posts punctuate the main portion of the barn and a fifth bay opens to a separate storage wing at the north end of the building. The south, north, and east sides of the barn are void of openings or decorative detailing.



Photograph 11: Primary, west façade and south end of the barn at 18133 East Comstock Road. Camera facing northeast, September 9, 2025.

Photograph 12: North end of the barn, showing side wing. Camera facing southeast, September 9, 2025.

Photograph 13: Rear, east elevation of the barn. Camera facing west, September 9, 2025.

B10. Significance (Continued from Page 3):

Agricultural History in San Joaquin County

The subject parcel was formerly an agricultural property, namely a walnut-producing orchard. The following context on agriculture in San Joaquin County was excerpted from *A Historical Context and Methodology for Evaluating Agricultural Properties in California* prepared by Agricultural HARD Team and the California Department of Transportation in 2023 (Agricultural HARD Team and California Department of Transportation 2023: 31-32, 143-146):

> *Agricultural History in San Joaquin County*
>
> The San Joaquin Valley forms the southernmost part of the Great Central Valley. The region includes all or portions of the counties of San Joaquin, Contra Costa, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and Kern. Approximately one third of the state's farmland lies in the San Joaquin Valley, and nearly 90 percent of the valley is currently under irrigation. No single river runs through the entire valley, although the San Joaquin River drains the northern portion of the valley and forms the core of the state's Delta region. Lake basins, once fed by runoff from the Sierra Nevada, formed the southern end of the valley. Early farming depended upon natural aquifers for irrigation, and on the reclamation of the Tulare and Buena Vista Lake Basins. The 1940s and 1950s saw increased irrigation water into the southern end of the valley through projects such as the CVP. Annual rainfall is highest at the northern end of the San Joaquin Valley near Sacramento, which averages around 20 inches a year, and lowest at the southern end of the valley near Bakersfield, which receives approximately 12 inches a year.
>
> The San Joaquin Valley is home to a wide variety of farming enterprises, ranging from smaller, intensively cultivated farms to large, extensive, industrial enterprises. Fruit and nuts are important crops, as are many other field crops (e.g., barley, beans, corn, hay, potatoes, sugar beets, and wheat). Vineyards are gaining importance in the region. Cotton has been among the most important field crops in the valley since its introduction in 1871. Livestock is widely distributed throughout the valley floor, including the former home to the famous Miller and Lux cattle enterprise. Dairies, poultry, and swine farms produce other products including milk, chickens, turkeys, eggs, pork, and apiary products. Grain sorghum became important in the area after 1870 as a summer grain crop.
>
> *Nut Industry in California*
>
> Immigrants brought chestnuts to California during the Gold Rush, mostly as seed of the European chestnut, but also some chestnuts of mixed origin and grafted varieties. Hundred plus-year-old chestnut trees still exist in the Mother Lode region, such as the original Colossal tree planted by Benjamin Tonella, a Swiss Italian immigrant, in Nevada City. Century-old chestnut trees also survive in the North Coast and Central Valley regions. Most of the current chestnut production in California reflects post-World War II production. Chestnuts are typically grown on farms less than 10 ac. in size. Chestnuts are California's commercial true nut crop, although recently small in numbers with only 155 ac. under cultivation in 2005, decreased from 600 ac. planted in chestnuts in 2000.
>
> The most successful nuts grown commercially in California are walnuts and almonds. Post World War II era nut production also included macadamia, pistachio, and pecan. Although pecans have been grown in California since the 19th century, the first commercial orchard was established in Clovis in the mid-1970s. Today, the pecan production belt is a narrow strip that stretches from Chico and Orland south to Bakersfield. In 2020, pecans were grown primarily on 6,000 ac. of farmland located in Fresno, Tulare, and Kern counties.
>
> Professor C. H. Dwinelle of the University of California at Berkeley first introduced the macadamia nut to California in 1877. He obtained seeds from Australia and planted several seedlings along Strawberry Creek on the Berkeley campus. In addition, two nurserymen, Ernest Braunton and Charles Knowlton, started selling seedling trees in Southern California around 1910. Macadamia trees were planted as ornamental and backyard trees for many years before World War II, particularly in the southern seven counties of the state. People who served in the Pacific Theater during World War II were exposed to macadamia nuts in Hawaii and returned from the war to search local markets for the nut. Commercial planting of macadamia began in California in 1946 in response to this heightened interest, when Robert W. Todd planted 2 ac. of seedling trees on his property on Grandview Street in Oceanside. The California Macadamia Society was formed in 1953 to guide the newly developing industry, promote their product, and conduct research. In response, the University of California Los Angles established a Subtropical Horticultural Department to better study and understand the nut. Macadamia trees thrive in high humidity, subtropical climates. Although the nut grows from San

Luis Obispo south to the Mexican border, Southern California, particularly the San Diego County coastal zone, has in the neighborhood of 2,500 ac. planted in macadamias.

American traders first introduced the pistachio to California in the 19th century; the first tree was planted in Sonoma in 1881, primarily because of increased demand. In 1929 the commercial development of pistachios began when American plant scientist William E. Whitehouse spent six months in Persia (modern-day Iran) collecting seed that he brought back to California. The next year, experimental plantings were established in California. However, no standout pistachio trees emerged until 1950, because pistachio trees require at least a full seven to ten years maturing. The California variety, named Kerman for the famous carpetmaking city in Iran near the area where the trees were first cultivated, began to expand throughout the state in the 1960s. Another account suggests that the California town of Kerman in Fresno County was actually named after two land speculators who subdivided and sold lots off to start the town. In 1977, there were 1,700 ac. planted in pistachios in the state, primarily in the Central Valley. By 2005, California was the second largest producer of pistachios worldwide with over 100,000 ac. Planted. In 2020 there were 288,595 ac. planted in pistachios, primarily in Fresno, Kings, Madera, Tulare, and Kern counties, representing over 98 percent of all pistachios grown in the United States.

The walnut, although first introduced by the Spanish padres around 1769, did not flourish until the time of the early American settlers. Varieties of walnuts were often planted on homesteads as part of cultivation requirements and frequently remain as indications of the locations of homesteads that no longer exist. The first attempt at commercial production was reportedly established at Warner's Ranch in San Diego County in 1843. More than a dozen plantings existed by 1850, mainly near Los Angeles but also scattered from San Diego to Napa counties. In the Bay Area, California walnuts grew along creeks and streams. Walnut Creek, for example, located in Contra Costa County, was named for the groves of native walnuts growing in the area.

Joseph Sexton, a horticulturist, initiated California's first commercial walnut enterprise in 1867 to 1868, when he planted a grove of English walnuts in Goleta, next to Santa Barbara. Within a few years, 65 percent of all fertile land in this region grew Sexton's English walnuts. Over the next thirty years, orchard plantings multiplied and extended as far north as Chico. In 1875, the State Agricultural Society recorded 138,673 walnut trees, with 15 counties reporting more than 1,000 trees each. The 1870s marks a watershed for walnuts in California. Until this time, walnut plantings had consisted entirely of the small, round, hard-shelled, inferior walnuts introduced by the padres. In addition to Joseph Sexton's soft-shell English walnut, Felix Gillet introduced and developed certain French varieties at Nevada City, which became the basis for the industry in central and Northern California and in Oregon. Between 1880 and 1905 superior varieties of walnuts were planted, including Placentia and Eureka, which now make up most of the Southern California production.

Between 1900 and 1930 walnut acreage increased nearly sevenfold and production increased tenfold. The California Walnut Growers' Association organized in 1912 and successfully applied the principles of cooperative effort to the solution of the problems of the industry. By 1910, the introduction of Valencia oranges and lemons along with increased urban population in Southern California, resulted in the elimination of walnut orchards in Los Angeles and Orange counties. The City of Walnut in Los Angeles County, for example, originated as part of Rancho Los Nogales ('Ranch of the Walnut Trees'), which was acquired piecemeal from Jose de la Cruz Lineras by the Vejar family beginning in 1837. Local growers in the city planted both lemon and walnut trees, with the latter being the major agricultural product until the 1930s, when a pest infestation destroyed the walnut orchards. In addition, declining yields and quality, increasingly warmer winters that caused a delay of blooming, and a pest infestation resulted in the restriction of acreage in Southern California and consistent expansion in the north. By the 1930s the commercial walnut business moved northward to Stockton where improved irrigation, better pest control, ideal climate, and rich soil were more conducive to larger yields. By this time the California walnut had virtually displaced the imported product in United States markets and had become an important export.

California emerged as the largest producer of walnuts in the world by the 1940s. The California Walnut Board was established in 1948 to represent the walnut industry and growers. Today, the Sacramento and San Joaquin valleys are the center of walnut production, producing 99 percent of the commercial United States walnut supply. On the global market, California produces two-thirds of the world's supply of walnuts. Today, almonds are California's largest drupe crop in both value and acreage. The Spanish introduced the almond tree to California in the late 1700s. The moist, cool weather of the coastal missions, however, did not provide ideal growing conditions, and trees were not successfully planted inland until the 1800s. The first attempts to grow almonds commercially in the United States occurred in New England

and the Middle Atlantic and Southern states. Nevertheless, growers soon learned that the early blooming almond succumbed to late frosts or disease in areas of high humidity. California's Central Valley, with its Mediterranean climate, provided the right environmental conditions for successful almond production. In the early 1850s, plantings near Sacramento, Monterey, and Los Angeles all showed promise.

During the 1870s, through research and crossbreeding, several of today's prominent almond varieties had been developed. By the turn of the 20th century, the almond industry firmly established itself in the Sacramento and San Joaquin valleys. The rise of almond production in California is largely the result of the California Almond Growers Exchange, now Blue Diamond. In 1909, J. P. Dargitz of Acampo near Stockton took an active lead in promoting an almond cooperative and made an appeal for a state organization. Members from nine independent almond growing associations in Antelope, Orangevale, Fair Oaks, Davis, Capay, Sutter County, Live Oak, Oakley, and San Joaquin County then met in Sacramento on18 March 1910 to discuss the formation of a statewide organization. As a result, the California Almond Growers Exchange (CAGE) formed on 7 May 1910 consisting of 230 independent growers with headquarters in Sacramento. In 1915 the CAGE built a new receiving and packaging plant that eventually grew into the largest nut processing plant in the world. In 1915 the cooperative adopted the Blue Diamond (the rarest diamond in the world) as their brand symbol, as a way to distinguish the California project from Spanish and Italian imports. As a result of their marketing efforts, government lobbying, and quality control, California's almond production increased from an annual average of 3,500 tons in the 1910s to 9,440 tons in the 1920s.

In 1931, Blue Diamond had 400 growers supplying 20 million pounds of almonds and 2,000 growers by 1940. Today, approximately 3,500 growers cooperatively own Blue Diamond Growers (established in 1980 from CAGE) and along with another 2,500 growers in California, produce the entire supply of almonds in the United States and nearly 80 percent of the worldwide production. In addition, almonds currently rank as the seventh largest U.S. food export. Today, California is the only place in North America where almonds are grown commercially, with more than 1.5 million ac. planted in the San Joaquin and Sacramento valleys, stretching 400 miles between Bakersfield and Red Bluff. In 2019 three billion pounds of almonds were produced.

Property History

An 1855 survey plat illustrates the subject property, situated in Section 3 of Township 2 North, Range 8 East, as entirely undeveloped, with the Calaveras River positioned to the northeast. In contrast, neighboring Section 4 had already undergone improvements by that time, including a schoolhouse, residence, several fences, and a ditch, indicating the early stages of settlement in the vicinity (GLO 1855). By 1894, the segments of Duncan Road and Comstock Road adjacent to the subject property were complete (USGS 1894).

Based on historical topographical maps and aerial photographs, the subject was developed with multiple structures prior to 1941, presumably a residence and ancillary facilities (NETR Online 1941; USGS 1908). The structures present with the property in a 1941 aerial photo do not appear to be the current buildings on the property. San Joaquin County Assessor data indicates that the residence on the property was constructed in 1948, and by 1957 the broader parcel was planted as a walnut orchard, and the extant barn had been built (NETR Online 1957; ParcelQuest 2025). The garage sited north of the house was added sometime between 1972 and 1984 to replace a smaller ancillary building (NETR Online 1968, 1984; UCSB 1972).

Through the present day, the immediate surroundings of the subject property have remained rural, and the adjacent properties appear to be agricultural and/or residential in use. Very few modifications appear to have been imposed on the property since the 1980s. In recent years, likely sometime after 2023, the walnut orchard on the property was cleared (Google Earth 2023).

Occupancy History

Louis and Jeanette Barbagelta, the current owners of 18133 East Comstock Road, have owned the property since 1972 (Ancestry 2020; ParcelQuest 2025). Very little information about the Barbageltas was identified through relevant keyword searches on Ancestry.com, Newspapers.com, Internet Archive, and another online repositories. No other historic-era owners were identified during research (Ancestry 2025; Internet Archive 2025; Newspapers.com 2025; CDNC 2025).

Architecture

The residence and garage at 18133 East Comstock Road display some modest elements of the Ranch architectural style that was popular throughout California during the mid-twentieth century. Appearing first as custom single-family home builds, the Ranch style emerged in 1920s California thanks to the work of Cliff May, a San Diego designer who developed a distinct aesthetic centered around the informal single story open floor plan. In the years following World War II, developers began to favor the style for application to mass produced suburban communities, and the modernist *hacienda* inspired aesthetics became synonymous with midcentury subdivisions, neighborhoods, and planned communities. Around 1945, the style was adapted to commercial and institutional functions such as motels, gas stations, supermarkets, churches, civic buildings, and schools. Circa 1975, the Ranch style's popularity declined due to a scarcity of expansive buildable land resulting from the previous decade's suburbanization of many areas and a growing desire for more formal and traditional styles (LA City Planning 2015; McAllester 2015). The character-defining features of the style are bulleted below.

- Often one level with an open floor plan
- Use of natural materials such as stone, wood, stucco, and/or brick siding
- Rectangular, U, or L shaped
- Low-pitched asymmetrical roofs
- Large picture windows

The barn on the property exhibits a utilitarian design, emphasizing function over form. Its construction reflects a pragmatic approach, characterized by the use of locally sourced materials and straightforward building techniques. Lacking ornamentation or adherence to a specific architectural style, the barn's design underscores its purpose-driven nature, prioritizing economy and efficiency over aesthetic distinction.

Architect/Builder

Research through targeted searches on Newspapers.com, Internet Archive, and another online repositories did not confirm the specific architect(s) or builder(s) associated with the buildings present 18133 East Comstock Road (Internet Archive 2025; Newspapers.com 2025; CDNC 2025).

Historical Resource Evaluation (Sacramento Register/CRHR/NRHP)

Developed during the mid-twentieth century, 18133 East Comstock Road is a former agricultural property that historically produced walnuts. According to *A Historical Context and Methodology for Evaluating Agricultural Properties in California*: "...there must be a direct and important connection between the property and the area of significance, established through documentation and physical evidence. In addition, rarity of the resource should be considered. There are many agricultural resources in California that may be associated with a specific theme but not all are eligible" (Agricultural HARD Team and California Department of Transportation 2023: 332). Research did not identify the property significantly contributed to the agricultural development of San Joaquin County. The property was one of many similar agricultural properties in the county; it was not the first agricultural property; it did not have the highest yields of produce; nor was it the site of a technological advancement in walnut farming practices. Therefore, the property is recommended ineligible for listing in the NRHP and CRHR under Criteria A/1.

The original owner/occupant of 18133 East Comstock Road is undetermined. Little specific information regarding Louis and Jeanette Barbagelta was identified as part of the current study, and research did not indicate that either individual made contributions within the context of local, state, or national history that would warrant inclusion of the subject property in any register. There is no demonstrable evidence that any other owners or occupants made notable contributions to history at the local, state, or national level. The property is, therefore, recommended ineligible under Criteria B/2.

The extant historic-period buildings that comprise 18133 East Comstock Road were constructed at various dates during the mid-twentieth century. The residence and garage are simple expressions of Ranch-style architecture expressed through their massing and limited detailing. However, neither building is an excellent example of the style, which is well represented throughout the region. Further, both buildings have been substantially altered with replacement fenestration and roofing and modern textured stucco siding. The utilitarian barn on the property is likewise not exemplary for its design. It does not adhere to an identifiable architectural style, type, period, or construction method, and its overall simplicity lacks distinction or high artistic value. Research through targeted searches on Ancestry.com, Newspapers.com., Internet Archive, and other online databases did not reveal the original architect or builder of any of residence, garage, or barn. Therefore, the subject property is recommended ineligible under Criterion C/3.

The property is not likely to yield valuable information that will contribute to our understanding of human history because the property is not and never was the principal source of important information pertaining to subjects such as twentieth century agricultural properties in San Joaquin County. Therefore, the property is recommended ineligible for listing in the NRHP and CRHR under Criteria D/4.

In conclusion, 18133 East Comstock Road is recommended ineligible for listing in the NRHP and CRHR due to lack of historical and architectural significance and is not a historical resource as defined by CEQA Section 15064.5(a) or historic property as defined by 36 CFR 800.16(l)(1).

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Attachment 3

Site Photographs

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Appendix A

Air Quality and Greenhouse Gas Study

Attachment 4

Special-Status Plant Species with Potential to Occur

Attachment 1

Figures

CalEEMod Calculations

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GHG Offset Calculations

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flooding, slope instability, or drainage changes. Therefore, no impact associated with wildfires would occur.

NO IMPACT

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Attachment 2

Regulatory Setting

Appendix B

Biological Resources Assessment

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Appendix A

California Historical Resources Information System Record Search Results

Appendix C

Cultural Resources Technical Report

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Appendix B

Sacred Lands File Search Results

Appendix C

Local Historical Group Outreach

Appendix D

California Department of Parks and Recreation 523 Series Form Set

B12. References (Continued):

Agricultural HARD Team and California Department of Transportation. 2023. *A Historical Context and Methodology for Evaluating Agricultural Properties in California.* Accessed September 2025. https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/ser/historical-context-agricultural-properties-ca-a11y.pdf.

Ancestry. 2020. *U.S., Index to Public Records, 1994-2019.* Online Database. Accessed October 2025. https://www.ancestry.com/search/collections/62209/records/24380191?tid=&pid=&queryId=dc3464cd-3c0d-4aec-b650-0066915a4ebb&_phsrc=Poz1&_phstart=successSource.

_____. 2025. Keyword searches including property address (spelling variations of 18133 East Comstock Road) and current owners (spelling variations of Louis and Jeanette Barbagelta). Online Database. Accessed September and October 2025. https://www.ancestry.com/.

California Digital Newspaper Collection (CDNC). 2025. Keyword searches including property address (spelling variations of 18133 East Comstock Road) and current owners (spelling variations of Louis and Jeanette Barbagelta). Online Database. Accessed September and October 2025. https://cdnc.ucr.edu/.

Davis, Olive. 1991. *From the Ohio to the San Joaquin: A Biography of Captain William S. Moss 1796-1883.* Stockton: Heritage West Books.

GLO (General Land Office). 1855. *Township 2 North, Range 8 East.* Survey Plat. Accessed October 2025. https://glorecords.blm.gov/details/survey/default.aspx?dm_id=293129&sid=a01p5wop.4lq#surveyDetailsTabIndex=1.

Google Earth. 2023. "18133 East Comstock Road, Linden, CA." Aerial Photograph. Accessed September 2025.

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