DRAFT
ENVIRONMENTAL IMPACT REPORT
JANUS SOLAR PROJECT

COUNTY OF COLUSA
COMMUNITY DEVELOPMENT DEPARTMENT
220 12th Street
Colusa, California 95932

State Clearinghouse No. 2020070577

October 8, 2021

JANUS SOLAR DRAFT ENVIRONMENTAL IMPACT REPORT TABLE OF CONTENTS

APPENDICES

EXECUTIVE SUMMARY

INTRODUCTION

Janus Solar PV, LLC (Applicant), a subsidiary of RWE Solar Development, LLC has applied to the Colusa County Community Development Department for a Use Permit (UP)[1] to construct, operate, maintain, and decommission a photovoltaic (PV) electricity generating facility, with a battery energy storage system (BESS) and associated facilities and infrastructure, to be known as the Janus Solar Project (Project). The County of Colusa (County), as the CEQA Lead Agency, is preparing this Environmental Impact Report (EIR) (State Clearinghouse No. 2020070577) to document its analysis of the potential direct, indirect, and cumulative impacts of the Project.

The Project would generate and store up to 80 megawatts alternating current (MW_{AC})[2] on an approximately 1,024-acre site, owned by a private landowner in unincorporated western Colusa County. To avoid environmental constraints, an estimated 768 acres of the 1,024-acre site would be used for the Project. The proposed battery energy storage system (BESS) would extend the period of time each day that the Project could contribute PV-generated energy to the electrical grid. The Project would connect to the electrical grid at the existing Cortina Substation, which is owned and operated by Pacific Gas and Electric Company (PG&E), approximately 4 miles northeast of the Project site.

"Projects" within the State of California are required to undergo environmental review to determine the environmental impacts associated with implementation of the project in accordance with the California Environmental Quality Act (CEQA). For the proposed Project, the County is the lead agency, and thus is required to conduct an environmental review to analyze the potential environmental effects associated with the proposed Project.

This document is a Draft EIR prepared in accordance with CEQA. It provides an overview of the proposed Project and considers alternatives, identifies the anticipated environmental impacts from the proposed Project and the alternatives, and identifies mitigation measures designed to reduce the level of significance of any significant impact.

PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The primary purpose of CEQA is to inform the public and decision makers as to the potential impacts of a project and to allow an opportunity for public input to ensure informed decision making. CEQA requires all state and local government agencies to consider the environmental effects of projects over which they have discretionary authority. CEQA also requires each public agency to mitigate or avoid the significant environmental impacts resulting from proposed projects, when feasible, and to identify a range of feasible alternatives to the proposed Project that could reduce those environmental effects. The EIR must include the contents required by

[1] The Use Permit process allows the County to consider, in its discretion, uses that would be essential or desirable, but that are not allowed as a matter of right within a zoning district. Energy generation for off-site use is permitted within the Foothill Agriculture Zone with approval of a Use Permit.

[2] PV panel capacity general is measured in direct current (DC) watts; however, because the DC output from panels must be converted to alternating current (AC) before being distributed on the electric grid, this EIR reports expected capacity in terms of AC watts. Although preliminary estimates indicate that 80 MW_{AC} would be the expected nominal generating capacity of the Project, the actual generating capacity would depend on the efficiency of the PV panels available at the time of construction and the layout and tracking technology approved.

CEQA and the *CEQA Guidelines*, and examine all phases of the project, including planning, construction, operation, and any reasonably foreseeable future phases.

PROJECT LOCATION

The Project is located approximately 6.5 miles southwest of the City of Williams at 1958 and 1961 Spring Valley Road, and is within Section 1, 2, and 3 of Township 14 North, Range 4 West, on the U.S. Geological Survey 7.5-minute Quadrangle Map. Bounded by private land used for agriculture to the north, south, and west of the Project site, the Project is approximately 1 mile south and east of Highway 20 and 1.3 miles southeast of the Tehama-Colusa Canal.

PROJECT OBJECTIVES

The Applicant has identified the following Project Objectives:

1. Establish a PV solar power-generating facility of a sufficient size and configuration to produce up to 80 MW_{AC} of electricity at the point of interconnection (POI) in a cost-competitive manner.
2. Assist California utilities in meeting their obligations under California's Renewable Portfolio Standard (RPS) Program and Senate Bill 100 (SB 100), which calls for 100 percent of all electricity sold in California to come from carbon-free resources by 2045, including 60 percent renewables by 2030.
3. Assist California utilities in meeting their obligations under the California Public Utility Commission's (CPUC) Energy Storage Framework and Design Program.
4. Provide for the economically viable, commercial financeable, and environmentally beneficial use of the site's water-limited agricultural capacity.
5. Develop a site in proximity to transmission infrastructure in order to minimize environmental impacts.
6. Facilitate grid integration of intermittent and variable PV solar generation and minimize line losses associated with off-site storage by collocating battery storage at the PV solar facility site.
7. Develop a solar power generation facility in Colusa County, which would support the economy by investing in the local community, creating local construction jobs, and increasing tax and fee revenue to the County.

PROJECT DESCRIPTION

The Project would develop approximately 768 acres of the 1,023.9-acre Project site for a PV solar generating facility. The Project would generate 80 MW_{AC} of renewable energy and would include up 80 MW_{AC} of BESS. The Project would comprise of major components such as solar arrays and inverter blocks, as well as supporting facilities including a substation, BESS, a transmission line, and more.

PROJECT IMPLEMENTATION SCHEDULE

Construction is projected to begin by the end of 2022.

SUMMARY OF IMPACTS

Table EX-1: Summary of Potential Impacts and Mitigation Measures summarizes the potential impacts for the proposed Project. The table also identifies mitigation measures recommended to reduce, avoid or minimize significant impacts and indicates the net level of impact following implementation of all mitigation measures.

The potentially adverse effects of the proposed Project are discussed in Chapters 4.1 through 4.20 of this Draft EIR. Mitigation measures have been recommended that would avoid, reduce, or minimize impacts. All of the potential impacts associated with the proposed Project would be either less than significant or mitigated to less than significant. The proposed Project would not result in any significant unavoidable impacts.

PROJECT ALTERNATIVES

Section 15126.6 of the *CEQA Guidelines* requires consideration and discussion of alternatives to the proposed Project, which would feasibly attain most of the basic objectives of the Project and would avoid or substantially lessen any of the significant effects of the proposed Project. In addition to the proposed Project, two project alternatives were considered and are briefly summarized here (and are discussed in detail in Chapter 5 of this Draft EIR).

- **No Project Alternative:** The Project site would not be developed and would remain in its existing condition and continue to experience a reduction in agricultural production from water resource allocation constraints.
- **Distributed Solar Alternative:** The Distributed Solar Alternative would develop solar PV systems on the existing rooftops throughout Colusa County.
- **Reduced Acreage Alternative:** The Project site would be reduced by 342 acres (from 1,024 acres to 682 acres). See Figure 5-1. This alternative would otherwise be as described in Chapter 2, *Project Description*.
- **Northeast Site Alternative:** An alternate site which consists of 15 contiguous parcels totaling approximately 917 acres and is located approximately 5 miles northeast of the Project site, on the north side of Highway 20 and just west of Williams. See Figure 5-2.

Table EX-1: Summary of Potential Impacts and Mitigation Measures

Potential Impacts	Level of Significance	Mitigation Measures
Agriculture and Forestry Resources		
IMPACT 4.1-1: Would the Project: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No Impact	No mitigation required
IMPACT 4.1-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract?	Less than Significant Impact with Mitigation Incorporated	**AGR-1: Williamson Act Cancellation** The Applicant shall file a Petition for Cancellation of Contract for the Williamson Act Contract on the Project site, for consideration by the Colusa County Board of Supervisors, prior to construction.
IMPACT 4.1-3: 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 Resource Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No Impact	No mitigation required.
IMPACT 4.1-4: Result in loss of forest land or conversion of forest land to non-forest use?	No Impact	No mitigation required.
IMPACT 4.1-5: 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?	Less than Significant Impact	No mitigation required.
AIR QUALITY		
IMPACT 4.2-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?	Less than Significant Impact	No mitigation required.
IMPACT 4.2-2: 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?	Less than Significant Impact	**AQ-1: Dust Control Measures** During construction of the Project, the primary construction contractor shall implement the following practices during all construction related activities: • All disturbed areas, including soil piles, areas that have been graded, and unpaved roads, shall be watered twice daily during dry conditions and when feasible covered and enclosed. • When materials are transported offsite, they shall be wetted and covered securely and at least 2 feet of freeboard shall be maintained.

Potential Impacts	Level of Significance	Mitigation Measures
		• Limit traffic speeds on unpaved roads to 15 miles per hour • Curtail construction activities when the County's Air Quality Index exceeds 150.
IMPACT 4.2-3: Would the project expose sensitive receptors to substantial pollutant concentrations?	Less than Significant Impact with Mitigation Incorporated	**AQ-2: Construction Equipment Requirements** During construction, diesel particulate filters or other CARB-verified diesel emission control strategies shall be installed on construction equipment. All on- and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the 5-minute idling limit. All construction equipment shall be maintained in proper tune according to the manufacturer's specifications. Equipment must be checked and determined to be running in proper condition before the start of work. Idling, staging and queuing of diesel equipment within 1,000 feet of sensitive receptors shall be limited.
IMPACT 4.2-4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less than Significant Impact	No mitigation required
AESTHETICS		
IMPACT 4.3-1: Would the project have substantial adverse effect on a scenic vista?	No Impact	No mitigation required.
IMPACT 4.3-2: Would the project substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact	No mitigation required.
IMPACT 4.3-3: In non-urbanized area, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations of governing scenic quality?	Less than Significant Impact	No mitigation required.
IMPACT 4.3-4: Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Less than Significant Impact	No mitigation required.

Potential Impacts	Level of Significance	Mitigation Measures
BIOLOGICAL RESOURCES		
IMPACT 4.4-1: Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?	Less than Significant Impact with Mitigation Incorporated.	**BIO-1: Protection of Special Status Species** **Parry's Rough Tarplant** A pre-construction survey for Parry's rough tarplant shall be conducted in work areas with potential habitat no more than 14 days prior to construction activities during the blooming period (May to October). If Parry's rough tarplant populations are located outside of the Project construction footprint (including staging areas), a qualified biologist shall flag an appropriate zone to completely avoid impacts to any individuals. If necessary, based on the timing of the construction work, populations may also be flagged based on previous survey data of the population extents. If Parry's rough tarplant populations cannot be avoided, a qualified biologist shall prepare a seed collection and replanting plan to reduce impacts to the identified special-status plant populations. Temporary impacts (impacts in areas that would be restored to natural conditions) may be mitigated by salvaging the first 6 inches of topsoil during ground disturbance, storing on-site and protecting the soil from weed seed dispersal, and then returning the soil horizon to its original profile to keep seeds at the appropriate soil depth. Permanent impacts (impacts in areas that would not be restored to natural conditions) may be mitigated by enhancing other Parry's rough tarplant habitat within or outside the Project site. Topsoil would not be salvaged in the case of permanent impacts, and other habitat enhancement methods would be used, such as seed collection and propagation, in other non-impacted locations. **Burrowing Owl** The Project owner shall have pre-construction surveys performed no less than 14 days prior to the initiation of equipment staging or ground-disturbing activities (e.g., vegetation clearing or grading) and within 24 hours prior to these activities. A qualified biologist shall conduct pre-construction surveys on the site and 150-meters around the site (access permitting) in areas with suitable burrowing habitat to locate any active breeding or wintering BUOW burrows and to check known burrows. Areas that have been plowed within 12 months prior to the start of ground-disturbing activities are not considered suitable habitat. The survey methodology shall be consistent with the methods outlined in the CDFW (2012) Staff Report on Burrowing Owl Mitigation and shall consist of walking parallel transects 23 to 66 feet (7 to 20 meters) apart, noting any potential burrows with fresh BUOW sign or presence of BUOWs, and visiting potential burrows during the timeframe described in the protocol. If the work activity halts for a period of 7 days or more, the survey would need to be conducted again prior to the continuation of site activities. Copies of the survey results shall be submitted to CDFW and the Colusa County Planning Department.

Potential Impacts	Level of Significance	Mitigation Measures
		• If BUOWs are detected on the Project site or within 150 meters during the pre-construction survey, a Project-specific mitigation plan shall be prepared for CDFW review and approval and implemented to protect BUOWs and their nest sites. No ground-disturbing activities, such as vegetation clearance, grading, or equipment staging shall be permitted within 330 feet from an active burrow during the breeding season (February 1 to August 31), unless otherwise approved by a qualified biologist. During the non-breeding (winter) season (September 1 to January 31), no ground-disturbing work or equipment staging shall be permitted within a buffer of 165 feet from the active burrow. Depending on the level of disturbance, a smaller buffer may be established by a qualified biologist based on the visibility and sensitivity responses of each individual BUOW or pairs in consultation with CDFW. • If burrow avoidance is infeasible during the non-breeding season or during the breeding season where resident BUOWs have not yet begun egg laying or incubation or where the juveniles are foraging independently and capable of independent survival, a qualified biologist shall implement a passive relocation program in accordance with the CDFW (2012) Staff Report on Burrowing Owl Mitigation. If passive relocation is anticipated due to on-site BUOW populations, a Burrowing Owl Exclusion Plan in accordance with CDFW (2012) Staff Report on Burrowing Owl Mitigation would be included in the Project-specific mitigation plan prior to passive relocation activities. **Swainson's Hawk** If construction (i.e., equipment staging, vegetation removal, or ground disturbance) is scheduled to commence outside of the Swainson's hawk nesting season (September 16 to February 28), no preconstruction surveys or additional measures are required for Swainson's hawk. During the breeding season (March 1 to September 15), a qualified biologist shall conduct preconstruction surveys of all potential nesting habitat within the Project site. The survey shall focus on potential nest sites within a 0.5-mile buffer around the site in areas where access to neighboring properties is available or visible using a spotting scope or binoculars. Surveys shall be conducted in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000) and occur no more than 10 days prior to construction activities. Surveys need not be conducted for the entire Project site at one time; they may be phased so that surveys occur shortly before a portion of the Project site is disturbed. The surveying biologist must be qualified to determine the status and stage of nesting by Swainson's hawk without causing intrusive disturbance. If active

Potential Impacts	Level of Significance	Mitigation Measures
		Swainson's hawk nests are found, a 0.5-mile buffer shall be established by a qualified biologist around active nests and no construction within the buffer shall be allowed until the biologist has determined that the nest is no longer active (e.g., the nestlings have fledged and are no longer reliant on the nest), adult and juvenile Swainson's hawks have left the area, or the breeding season has ended. Encroachment into the buffer for Swainson's hawk must be authorized by the CDFW. **American Badger** A pre-construction survey for the American badger shall occur during the burrowing owl surveys. Any active American badger dens shall be avoided by establishing a minimum 50-foot buffer around the den. No construction activities shall occur within this buffer unless a qualified biologist determines that the den is inactive.
		BIO-2: Worker Environmental Awareness Training and Best Management Practices for Biological Resources During construction, operation and maintenance, and decommissioning of the facility, the Project owner and/or contractor shall implement the following general avoidance and protective measures to protect special-status wildlife species and habitats: • Prior to and for the duration of construction activities, the Project owner, or its contractor, shall implement a Worker Environmental Awareness Program to train all on-site construction personnel how to recognize and protect biological resources on the Project site. The Worker Environmental Awareness Program training shall include a review of the special-status species and other sensitive biological resources that could exist in the Project area, the locations of sensitive biological resources and their legal status and protections, and measures to be implemented for avoidance of these sensitive resources, highlighting Parry's rough tarplant, burrowing owl, Swainson's hawk, American badger, nesting birds, and protected waters and wetlands. • The Project owner shall limit the areas of disturbance. Parking areas, new roads, staging, storage, excavation, and disposal site locations shall be confined to the smallest areas possible. Buffers and avoidance areas established for biological resources, as described in BIO-1 and BIO-3 above, shall be delineated with stakes and/or flagging prior to construction. Construction-related activities and use of vehicles and equipment shall not occur within protected buffers or avoidance areas. • Any sensitive habitats, including riparian areas and state and federally protected wetlands, within 50 feet of the Project impact areas shall be flagged in the field by a qualified biologist prior to Project construction. To

Potential Impacts	Level of Significance	Mitigation Measures
		the extent feasible, the greatest buffer (up to 50 feet) should be flagged around the sensitive habitat. No work will occur in the flagged areas. The avoidance areas will be maintained for the duration of construction activities in the vicinity of these areas. • To prevent inadvertent entrapment of wildlife during construction, all excavated, steep-walled holes or trenches with a 2-foot or greater depth shall be covered with plywood or similar materials at the close of each working day or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected by on-site workers for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If a special-status species is trapped, the USFWS and/or CDFW shall be contacted immediately. • All construction pipes, culverts, or similar structures with a 4-inch or greater diameter that are stored at a construction site for one or more overnight periods shall be covered and/or thoroughly inspected for special-status wildlife or nesting birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an animal is discovered inside a pipe, that section of pipe shall not be moved until a qualified biologist has been consulted and the animal has either moved from the structure on its own accord or until the animal has been captured and relocated by the biologist. No handling of special-status species shall occur without consultation with the applicable agencies (CDFW, USFWS). • Vehicles and equipment parked on the site during construction shall have the ground beneath the vehicle or equipment inspected for the presence of wildlife prior to moving. • Vehicular traffic shall use existing routes of travel. Cross country vehicle and equipment use outside of the Project properties shall be prohibited. • A speed limit of 20 miles per hour shall be enforced within all construction areas. • A long-term trash abatement program shall be established for construction, operation, and decommissioning and submitted to the County. Trash and food items shall be contained in closed containers and removed daily to reduce the attractiveness to wildlife such as common raven (*Corvus corax*), coyote (*Canis latrans*), and feral dogs. • Workers shall be prohibited from bringing pets to the Project site and from feeding wildlife in the vicinity. • Intentional killing or collection of any wildlife species shall be prohibited.

Potential Impacts	Level of Significance	Mitigation Measures
		• Rodenticides shall not be used within the Project site except within buildings and disturbance to mammal burrows shall be avoided and minimized.
		BIO-3: Protection of Nesting Birds If construction (i.e., vegetation removal or ground disturbance) is scheduled to commence outside of the bird nesting season (September 1 to January 31), no preconstruction surveys or additional measures are required for nesting birds, including raptors. During the nesting bird breeding season (February 1 to August 31), a qualified biologist shall conduct preconstruction surveys of all potential nesting habitat within the Project site where construction is planned. The survey shall focus on potential nest sites within a 500-foot buffer around the site in areas where access to neighboring properties is available or visible using a spotting scope or binoculars. Surveys shall be conducted no more than 14 days prior to construction activities. If the work activity halts for a period of 7 days or more, the survey would need to be conducted again prior to the continuation of site activities. Surveys need not be conducted for the entire Project site at one time; they may be phased so that surveys occur shortly before a portion of the Project site is disturbed. The surveying biologist must be qualified to determine the status and stage of nesting by migratory birds and all locally breeding raptor species without causing intrusive disturbance. If active nests are found, a suitable buffer (e.g., 200 feet for non-listed raptors, 50 feet for non-listed birds) shall be established by a qualified biologist around active nests and no construction within the buffer shall be allowed until the biologist has determined that the nest is no longer active (e.g., the nestlings have fledged and are no longer reliant on the nest) or the breeding season has ended. Encroachment into the buffer may occur at the discretion of a qualified biologist for non-listed species.
IMPACT 4.4-2: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	No Impact	No mitigation required
IMPACT 4.4.-3: 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 Impact	No mitigation required.
IMPACT 4.4-4: 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?	Less than Significant Impact	No mitigation required.

Potential Impacts	Level of Significance	Mitigation Measures
IMPACT 4.4-5: 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?	Less than Significant Impact with Mitigation Incorporated	Implement **BIO-1**, **BIO-2**, and **BIO-3**.
CULTURAL RESOURCES		
IMPACT 4.5-1: Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	No Impact	No mitigation required.
IMPACT 4.5-2: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	Less than Significant Impact with Mitigation Incorporated	**CUL-1: Cultural Resource Worker Education/Training** Prior to Project construction related to ground disturbing activities (e.g., vegetation removal, excavation, trenching, grading), the Project proponent shall conduct a worker education awareness program for Project construction personnel. A qualified archaeologist will be retained for the Project and will prepare and present the initial cultural resource briefing of the worker education awareness program prior to ground disturbing activities. During construction, the Applicant will provide the training to all new construction personnel. The cultural resource training will include an overview of applicable laws and penalties pertaining to disturbing cultural resources, a brief discussion of the prehistoric and historic regional context and archaeological sensitivity of the area, types of cultural resources found in the area, instruction that Project workers will halt construction if a cultural resource is inadvertently discovered during construction, and procedures to follow in the event an inadvertent discovery (Inadvertent Discovery Plan discussed below) is encountered, including appropriate treatment and respectful behavior of a discovery (e.g., no posting to social media or photographs). Per Mr. Kinter's request, Laverne Bill, Cultural Resources Manager of the Yocha Dehe Wintun Nation, shall be notified to participate in the cultural sensitivity/environmental training to discuss or provide text from a tribal cultural perspective regarding tribal cultural resources within the region during the initial pre-construction environmental training **CUL-2: Inadvertent Discovery of Archaeological Resources During Construction** A qualified archaeologist shall be retained to prepare an Inadvertent Discovery Plan for the Project and to be on-call in the event of an inadvertent discovery. The Inadvertent Discovery Plan will provide protocols and notification procedures in the event of an inadvertent discovery. During Project construction (e.g., ground disturbing activities such as vegetation removal, excavation, trenching, grading), should subsurface archaeological resources be discovered, all ground disturbing activities within 50 feet of the find shall cease and the qualified archaeologist shall be contacted to assess the significance of the find according to CEQA Guidelines

Potential Impacts	Level of Significance	Mitigation Measures
		Section 15064.5 and/or NRHP criteria (as applicable). If any find is determined to be significant, the archaeologist shall determine, in consultation with the implementing agencies and any local consulting Native American groups expressing interest, appropriate avoidance measures or other appropriate mitigation. Under CEQA Guidelines Section 15126.4(b)(3), preservation in place shall be the preferred means to avoid impacts to archaeological resources qualifying as historical resources. Methods of avoidance may include, but shall not be limited to, Project reroute or re-design, or identification of protection measures such as capping or fencing. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures, such as data recovery or other appropriate measures, in consultation with the implementing agency and any local consulting Native American representatives expressing interest in prehistoric or tribal resources. If an archaeological site does not qualify as an historical resource but meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site shall be treated in accordance with the provisions of Section 21083.2. In regard to an inadvertent discovery of human remains: existing regulations require that if human remains and/or cultural items defined by Health and Safety Code, Section 7050.5, are inadvertently discovered, all work in the vicinity of the find would cease and the Colusa County Coroner (Sheriff-Coroner Unit Telephone Number: 530.458.0200) would be contacted immediately. If the remains are found to be Native American as defined by Health and Safety Code, Section 7050.5, the coroner will contact the NAHC by telephone within 24 hours. **CUL-3: Inadvertent Discovery of Human Remains During Construction** The County and Applicant should continue to consult with interested tribes throughout the planning process and construction of the Project, as applicable. A tribal monitor from the Yocha Dehe Wintun Nation (or other local tribe as available) shall be notified to participate in monitoring visibly exposed, excavated subsurface soils associated with ground-disturbing construction activities (e.g., grading and trenching). The retained on-call Secretary of Interior qualified archaeologist shall assist in the preparation of a cultural resource monitoring plan and inadvertent discovery plan (CUL-2) that will include the worker resource education, inadvertent discovery procedures, and outline the guidelines for cultural resources monitoring. The Project archaeologist will coordinate with local tribes regarding the monitoring plan and tribal cultural resource monitoring of subsurface ground disturbing Project activities. At the completion of construction, a final monitoring report shall be prepared for the Project that summarizes the daily monitoring activities and resolution of any inadvertent discoveries identified during construction of the Project. The report will be submitted to the County and the NWIC.

Potential Impacts	Level of Significance	Mitigation Measures
IMPACT 4.5-3: Would the project disturb any human remains, including those interred outside of formal cemeteries?	Less than Significant Impact	No mitigation required.
ENERGY		
IMPACT 4.6-1: Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less than Significant Impact	No mitigation required.
IMPACT 4.6-2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No Impact	No mitigation required.
GEOLOGY AND SOILS		
IMPACT 4.7-1: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the state geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. ii) Strong seismic ground shaking? iii) Seismic-related ground failure, including liquefaction? iv) Landslides?	Less than Significant Impact	No mitigation required.
IMPACT 4.7-2: Would the project result in substantial soil erosion or the loss of topsoil?	Less than Significant Impact	No mitigation required.
IMPACT 4.7-3: 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?	Less than Significant Impact	No mitigation required.
IMPACT 4.7-4: 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?	Less than Significant Impact	No mitigation required.
IMPACT 4.7-5: Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	Less than Significant Impact	No mitigation required.

Potential Impacts	Level of Significance	Mitigation Measures
IMPACT 4.7-6: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less than Significant Impact with Mitigation Incorporated	**GEO-1: Paleontological Worker Education and Awareness Program (WEAP)** Before starting construction activities, on-site personnel should be trained in basic recognition of fossils and appropriate procedures to notify management in order to engage a qualified paleontological specialist in the event that fossils are discovered during construction activities (an unanticipated find). **GEO-2: Unanticipated Find Contingency** A qualified paleontological specialist, meeting the Secretary of the Interior's Professional Qualification Standards for the Society of Vertebrate Paleontology shall be retained by the Project Owner on an on-call status, to be brought on-site to evaluate the significance of any unanticipated discovery of paleontological resources (an unanticipated find) and determine if additional study is warranted. If the significance of the find under CEQA or California Public Resources Code, Section 21082 does not warrant such study, the qualified paleontologist may decide to record the find and allow work to continue. If the discovery proves significant under CEQA, preparation of a paleontological treatment plan, testing, or data recovery may be required at the discretion of the paleontological specialist.
GREENHOUSE GAS EMISSIONS		
IMPACT 4.8-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than Significant Impact	No mitigation required.
IMPACT 4.8-2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	No Impact	No mitigation required.
HAZARDS AND HAZARDOUS MATERIAL		
IMPACT 4.9-1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less than Significant Impact	No mitigation required.
IMPACT 4.9-2: Would the project create a significant hazard to the public or the environment through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Less than Significant Impact	No mitigation required.
IMPACT 4.9-3: Would the project emit hazardous emissions or handle hazardous materials or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	No Impact	No mitigation required.

Potential Impacts	Level of Significance	Mitigation Measures
IMPACT 4.9-4: Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No Impact	No mitigation required.
IMAPCT 4.9-5: 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?	No Impact	No mitigation required.
IMAPCT 4.9-6: Would the project impair implementation of or physically interfere with an adopted emergency response plan?	No Impact	No mitigation required.
IMPACT 4.9-7: Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	Less than Significant Impact	No mitigation required.
HYDROLOGY AND WATER QUALITY		
IMPACT 4.10-1: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	Less than Significant Impact	No mitigation required.
IMPACT 4.10-2: 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?	Less than Significant Impact	No mitigation required.
IMPACT 4.10-3: 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: 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? iv) Impede or redirect flood flows?	Less than Significant Impact	No mitigation required.
IMPACT 4.10-4: Is the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to the project inundation?	No Impact	No mitigation required.

Potential Impacts	Level of Significance	Mitigation Measures
IMPACT 4.10-5: Would the project conflict with or obstruct implementation of water quality control plan or sustainable groundwater management plan?	Less than Significant Impact	No mitigation required.
LAND USE AND PLANNING		
IMPACT 4.11-1: Would the project physically divide an established community?	No Impact	No mitigation required.
IMPACT 4.11-2: Would the project cause 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?	No Impact	No mitigation required.
MINERAL RESOURCES		
IMPACT 4.12-1: 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?	No Impact	No mitigation required.
IMAPCT 4.12-2: 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?	No Impact	No mitigation required.
NOISE		
IMPACT 4.13-1: 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?	Less than Significant Impact with Mitigation Incorporated	**NOISE-1: Noise Minimization** The Project shall implement the following construction management protocols to minimize noise impacts during construction: • Maintain all construction tools and equipment in good operating order according to manufacturers' specifications; • Limit use of major excavating and earth-moving machinery to daytime hours; • To the extent practicable, schedule construction activity during normal working hours on weekdays when higher sound levels are typically present and are found acceptable. Some limited activities, such as concrete pours, would be required to occur continuously until completion; • Equip any internal combustion engine used for any purpose on the job or related to the job with a properly operating muffler that is free from rust, holes, and leaks; • For construction devices that utilize internal combustion engines, ensure the engine's housing doors are kept closed, and install noise-insulating

Potential Impacts	Level of Significance	Mitigation Measures
		material mounted on the engine housing consistent with manufacturers' guidelines, if possible; • Limit possible evening shift work to low noise activities such as welding, wire pulling, and other similar activities, together with appropriate material handling equipment; and • Utilize a Complaint Resolution Procedure to address any noise complaints received from residents.
IMPACT 4.13-2: Would the project result in generation of excessive groundborne vibration or groundborne noise levels?	Less than Significant Impact	No mitigation required.
IMPACT 4.13-3: For a project within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact	No mitigation required.
POPULATION AND HOUSING		
IMPACT 4.14-1: Would the project induce substantial unplanned population growth in the area either directly (for example, by proposing new homes or businesses) or indirectly (for example, through the extension or roads or other infrastructure)?	Less than Significant Impact	No mitigation required.
IMPACT 4.14-2: Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No Impact	No mitigation required.
PUBLIC SERVICES		
IMPACT 4.15-1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: i) Fire protection? ii) Police protection? iii) Schools? iv) Parks? v) Other public facilities?	No Impact	No mitigation required.

Potential Impacts	Level of Significance	Mitigation Measures
RECREATION		
IMPACT 4.16-1: Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such as substantial physical deterioration of the facility would occur or be accelerated?	No Impact	No mitigation required.
IMPACT 4.16-2: 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?	No Impact	No mitigation required.
TRANSPORTATION		
IMPACT 4.17-1: Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Less than Significant Impact	No mitigation required.
IMAPCT 4.17-2: Would the project conflict or be inconsistent with CEQA Guidelines 15064.3, subdivision (b)?	Less than Significant Impact	No mitigation required.
IMPACT 4.17-3: Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Less than Significant Impact	No mitigation required.
IMPACT 4.17-4: Would the project result in inadequate emergency access?	Less than Significant Impact	No mitigation required.
TRIBAL RESOURCES		
IMPACT 4.18-1: Would the project cause adverse change in the significance of a tribal cultural resource, defined in Public Resource Code Section 21074 as either a site, feature, place, cultural landscape that is geologically defined in terms of the size and scope of the landscape, sacred plan, or object with cultural value to a California Native American tribe that is: i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code 5020.1(k) or **ii)** A resource determined by the lead agency in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (s) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code 5024.1, as	Less than Significant Impact with Mitigation Incorporated	Implementation of **Mitigation Measures CUL-1, CUL-2,** and **CUL-3** would be required.

Potential Impacts	Level of Significance	Mitigation Measures
the CEQA lead agency, has considered the significance of the resource to a California Native American tribe.		
UTILITIES AND SERVICE SYSTEMS		
IMPACT 4.19-1: 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 which would cause significant environmental effects?	Less than Significant Impact	No mitigation required.
IMPACT 4.19-2: Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	Less than Significant Impact	No mitigation required.
IMPACT 4.19-3: 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?	No Impact	No mitigation required.
IMPACT 4.19-4: 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?	Less than Significant Impact	No mitigation required
IMPACT 4.19-5: Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	No Impact	No mitigation required.
WILDFIRE		
IMPACT 4.20-1: 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?	No Impact	No mitigation required.
IMPACT 4.20-2: Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	Less than Significant Impact	No mitigation required.
IMPACT 4.20-3: 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,	No Impact	No mitigation required.

Potential Impacts	Level of Significance	Mitigation Measures
power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?		
IMPACT 4.20-4: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	Less than Significant Impact	No mitigation required.

AREAS OF CONTROVERSY

Section 15123 (b)(2) of the *CEQA Guidelines* requires that an EIR Executive Summary identify areas of controversy known to the lead agency, including issues raised by other agencies and the public.

In accordance with the CEQA Guidelines, a Notice of Preparation (NOP) was prepared and distributed to responsible agencies, affected agencies, and other interested parties on July 30, 2020. The NOP was posted in the County Clerk's office for 30 days. The NOP was submitted to the State Clearinghouse to officially solicit participation from interested public agencies in determining the scope of the EIR.

Comment letters were received in response to the NOP for this EIR from PG&E, the California Department of Transportation, the California Department of Conservation, the California Department of Fish and Wildlife, the California Native American Heritage Commission, the California Department of Forestry and Fire Protection, and the Williams Fire Protection Authority. The issues raised in these comment letters are addressed in this EIR. A copy of the NOP and the comment letters are included in Appendix A of this Draft EIR. No outstanding issues of controversy are known at this time.

1 INTRODUCTION

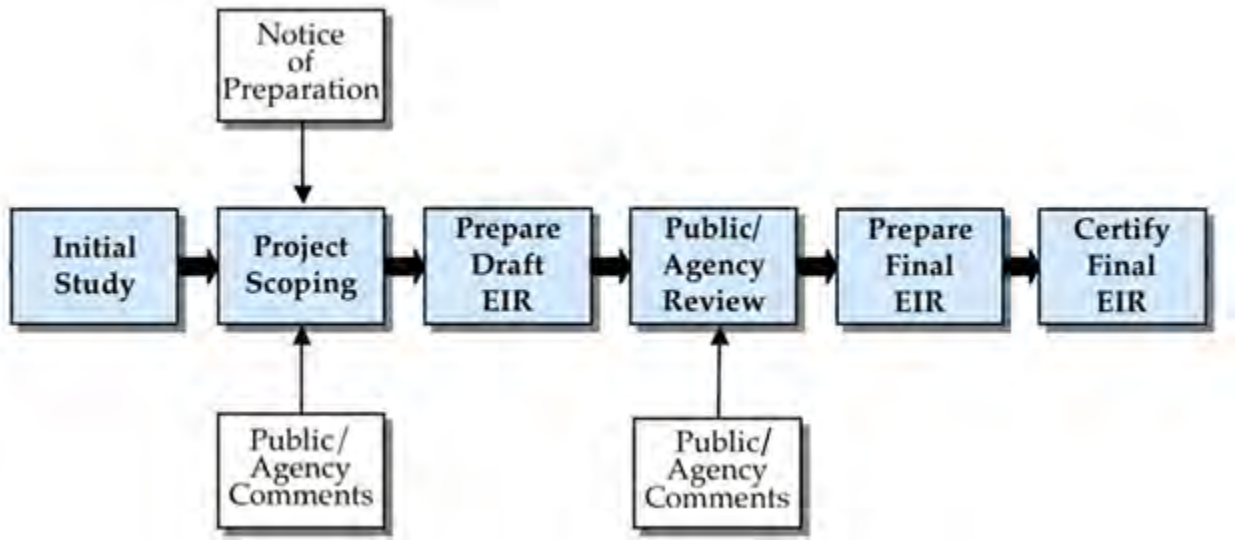
1.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

In accordance with the California Environmental Quality Act (CEQA; California Public Resources Code (PRC), Sections 21000 through 21189), all "projects" within the State of California are required to undergo environmental review to determine the environmental impacts associated with implementation of the project.

CEQA was enacted in 1970 by the California Legislature to disclose to decision-makers and the public the anticipated significant environmental effects of a proposed project and identify possible ways to avoid or minimize those significant environmental effects by recommending mitigation measures or feasible alternatives to the project. As the "Lead Agency" under CEQA, the Department is required to conduct an environmental review to analyze the potential environmental effects associated with proposed projects located within the County. When an Environmental Impact Report (EIR) is to be prepared, the Department is the lead agency for the preparation of the EIR.

Once completed, a Draft EIR is circulated to the public and affected agencies for review and comment. One primary objective of CEQA is to enhance public participation in the planning process and inform the public. During the environmental review process, CEQA provides several opportunities for the public to participate and provide input. The diagram below illustrates the CEQA process and points generally when public and agency input is received. Additionally, lead agencies are required to respond to public comments in the Final EIR. All this information is then considered by the decision-makers prior to taking final action on a proposed project.

The Environmental Review Process



1.2 SCOPE OF THE ENVIRONMENTAL IMPACT REPORT

The required contents and scope of an EIR are set forth in CEQA and its companion document, the CEQA Guidelines (California Code of Regulations, Section 15000 through 15387). This section provides a summary of the issues addressed in this Program EIR. Under the CEQA Guidelines, the analysis in the Draft EIR need only focus on issues determined to be potentially significant, whereas issues found to have less than significant impacts or no impact, do not require further evaluation.

As Lead Agency, the County completed a preliminary analysis of the proposed Janus Solar PV Project (the "proposed Project") and determined that due to the potential for significant environmental effects, an EIR must be prepared.

Based on that preliminary review, environmental effects that were determined to be potentially significant or less than significant after mitigation are discussed in detail under Chapter 4 of this Draft EIR and include the following:

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

Mitigation measures to reduce impacts to a less-than-significant level are proposed whenever feasible and appropriate. In addition to the environmental issues identified above, this Draft EIR includes all of the sections required by the CEQA Guidelines, including a discussion of feasible alternatives to the proposed Project, evaluation of cumulative and other related projects, growth-inducing effects of the proposed Project and irreversible environmental changes.

1.3 PUBLIC SCOPING PROCESS

This Draft EIR was prepared following input from the public, responsible agencies, and affected agencies through the EIR scoping process (see Appendix A), which included the following:

- In accordance with the CEQA Guidelines, a Notice of Preparation (NOP) was prepared and distributed to responsible agencies, affected agencies, and other interested parties on July 30, 2020.
- The NOP was posted in the County Clerk's office for 30 days. The NOP was submitted to the State Clearinghouse to officially solicit participation from interested public agencies in determining the scope of the EIR.
- Information requested and input provided during the 30-day public review period, regarding the contents of the NOP and the scope of the Program EIR, were incorporated in this Draft EIR (see Appendix A).

In addition to the EIR scoping process, the County conducted California Native American tribal consultation through the Assembly Bill (AB) 52 process for input regarding potential impacts to tribal cultural resources. The County sent formal AB 52 notification letters on July 10, 2020 to the following tribes:

- Daniel Gomez, Chairman, The Colusa Indian Community Council
- Charlie Wright, Chairperson, Cortina Rancheria – Kletsel Dehe Band of Wintun Indians
- Anthony Roberts, Chairperson, Yocha Dehe Wintun Nation
- Glenda Nelson, Chairperson, Estom Yumeka Maidu Tribe – Enterprise Rancheria
- Ronald Kirk, Chairperson, Grindstone Rancheria of Wintun-Wailaki
- Andrew Alejandre, Chairperson, Paskenta Band of Nomlaki Indians
- Jose Simon III, Chairperson, Middletown Rancheria of Pomo Indians

Responses were received by the following:

- Leland Kinter, Tribal Historic Preservation Officer, of the Yocha Dehe Wintun Nation replied on July 23, 2020 that the Project is within the aboriginal territories of the Yocha Dehe Wintun Nation and the tribe has an interest and authority in the Project Area. Mr. Kinter also stated the tribe has concerns that the Project could impact cultural resources and recommends cultural sensitivity training for Project personnel prior to the start of Project construction and on-site cultural monitors during ground disturbance.

1.4 ORGANIZATION OF THE EIR

The Draft EIR is organized into the following chapters so the reader can easily obtain information about the proposed Project and related environmental issues:

Chapter 1: Executive Summary – Consistent with CEQA Guidelines Section 15123, the Executive Summary chapter provides a summary of the proposed Project and discussion of the Project alternatives, areas of controversy and issues to be resolved and conclusions

regarding growth inducement and cumulative impacts. A summary of Project impacts and recommended mitigation measures is also provided.

Chapter 2: Introduction – Describes the purpose and use of the Draft EIR, provides a brief overview of the proposed Project, and outlines the organization of this Draft EIR. Includes a discussion of issues required by CEQA that are not covered in other chapters. This includes unavoidable adverse impacts, impacts found not to be significant, irreversible environmental changes, and growth inducing impacts.

Chapter 3: Project Description – Describes the environmental setting, proposed Project objectives, characteristics, land uses and requested Project actions.

Chapter 4: Environmental Analysis – Describes the existing physical and regulatory conditions, methods and assumptions used in impact analysis; thresholds criteria used to determine the impact significance; impacts that would result from the proposed Project; and applicable mitigation measures that would eliminate or reduce significant impacts for each environmental issue of concern.

Chapter 5: Alternatives – Consistent with CEQA Guidelines Section 15126.6, this chapter evaluates feasible alternatives to the proposed Project and the potential environmental effects of those alternatives. The analysis includes evaluation of the No-Project Alternative and discusses the Environmentally Superior Project Alternative.

Chapter 6: List of Preparers – Lists the individuals involved in preparing the Draft EIR and organizations and persons consulted.

Appendices – The Appendices include technical studies and reports and other relevant reference material used in evaluating the impacts of the proposed Project and referenced in the environmental analysis.

1.5 GROWTH INDUCEMENT

Section 15126.2(d) of the CEQA Guidelines provides the following guidance regarding growth-inducing impacts:

A project is identified as growth-inducing if it would foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment.

Growth inducement can be a result of new development that increases employment levels, removes barriers to development, or provides resources that lead to secondary growth. With respect to employment, the Project would require up to approximately 200 workers; the average number of workers on-site is anticipated to be approximately 50 to 150, depending on the construction activity. The existing construction labor pool in Colusa County and the surrounding Sacramento Valley area is sufficient for meeting Project needs.[1] Following construction, the Project would require up to three full-time personnel. On intermittent occasions, the presence of 5 to 30 workers may be required for repairs or replacement of equipment, panel cleaning, and other specialized maintenance. Non-routine (emergency) maintenance could require additional workers.

[1] The California Employment Development Department estimated that the annual average unemployment rate in Colusa County in May 2021 was approximately 11.2 percent (not seasonally adjusted) compared to the statewide unemployment rate of 7.9 percent (California Employment Development Department 2021).

Decommissioning and site restoration activities are expected to require a smaller workforce than construction; decommissioning activities are expected to take a several months to complete. Because construction and decommissioning are temporary, the Project is unlikely to cause substantial numbers of people to relocate to Colusa County. Therefore, this Project would not result in a large increase in employment levels that would significantly induce growth.

It is expected that construction workers would commute to the Project site instead of relocating to Colusa County; however, even if all workers were to migrate into Colusa County, the existing available housing supply could accommodate them without requiring new construction.[2] Therefore, the Project is not expected to induce population growth, the housing and provision of services for which could cause significant adverse environmental impacts.

Although the Project would contribute to the energy supply, which supports growth, the development of power infrastructure is a response to increased market demand, and the availability of electrical capacity by itself does not ensure or encourage growth within a particular area. Other factors such as economic conditions, land availability, population trends, availability of water supply or sewer services, and local planning policies have a more direct effect on growth.

1.6 IRREVERSIBLE IMPACTS

Section 15126.2(c) of the CEQA Guidelines defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continuing phases of the project. Irreversible impacts also can result from damage caused by environmental accidents associated with a project. Irretrievable commitments of resources should be evaluated to ensure that such consumption is justified.

Building the Project would commit nonrenewable resources during Project construction and ongoing utility services during Project operations. During operations, oil, gas, and other fossil fuels and nonrenewable resources would be consumed and irreversible commitments of small quantities of nonrenewable resources would occur as a result of long-term operations. However, once operational, the Project would result in a substantial net benefit associated with the amount of renewable energy that would be generated.

[2] In 2020, Colusa County had an estimated 8,227 housing units with a vacancy rate of 6.7 percent such that there were 716 vacant housing units.

2 PROJECT DESCRIPTION

2.1 OVERVIEW

Janus Solar PV, LLC (Applicant), a subsidiary of RWE Solar Development, LLC has applied to the Colusa County Community Development Department for a Use Permit (UP)[1] to construct, operate, maintain, and decommission a photovoltaic (PV) electricity generating facility, with a battery energy storage system (BESS) and associated facilities and infrastructure, to be known as the Janus Solar Project (Project). The County of Colusa (County), as the CEQA Lead Agency, is preparing this Environmental Impact Report (EIR) (State Clearinghouse No. 2020070577) to document its analysis of the potential direct, indirect, and cumulative impacts of the Project described in this chapter, and the alternatives described in Chapter 3, *Alternatives*.

The Project would generate and store up to 80 megawatts alternating current (MW_{AC})[2] on an approximately 1,024-acre site, owned by a private landowner in unincorporated western Colusa County. To avoid environmental constraints, only an estimated 768 acres of the 1,024-acre site would be used for the Project. The proposed battery energy storage system (BESS) would extend the period of time each day that the Project could contribute PV-generated energy to the electrical grid. The Project would connect to the electrical grid at the existing Cortina Substation, which is owned and operated by Pacific Gas and Electric Company (PG&E), approximately 4 miles northeast of the Project site.

2.2 LOCATION

The Project is approximately 6.5 miles southwest of the City of Williams. State Highway 20 runs about one mile from the Project site, north and west, as shown on Figure 2-1. The proposed Project would be located on three parcels totaling 1,023.9 acres of private property currently used for cattle grazing in Colusa County, California. The Project would connect to the Cortina Substation, located on Walnut Drive, approximately 3 miles northeast of the Project site. To interconnect the Project with the electrical grid, the Applicant would construct a new, 4.1-mile-long overhead, 60 kilovolt (kV) generation tie (gen-tie) line, partially located on the County's right-of-way (ROW) on Walnut Drive and Spring Valley Road and partially on land administered by the United States Bureau of Reclamation (USBR), from the Project site to the point of interconnection (POI) at the Cortina Substation.

[1] The Use Permit process allows the County to consider, in its discretion, uses that would be essential or desirable, but that are not allowed as a matter of right within a zoning district. Energy generation for off-site use is permitted within the Foothill Agriculture Zone with approval of a Use Permit.

[2] PV panel capacity general is measured in direct current (DC) watts; however, because the DC output from panels must be converted to alternating current (AC) before being distributed on the electric grid, this EIR reports expected capacity in terms of AC watts. Although preliminary estimates indicate that 80 MW_{AC} would be the expected nominal generating capacity of the Project, the actual generating capacity would depend on the efficiency of the PV panels available at the time of construction and the layout and tracking technology approved.

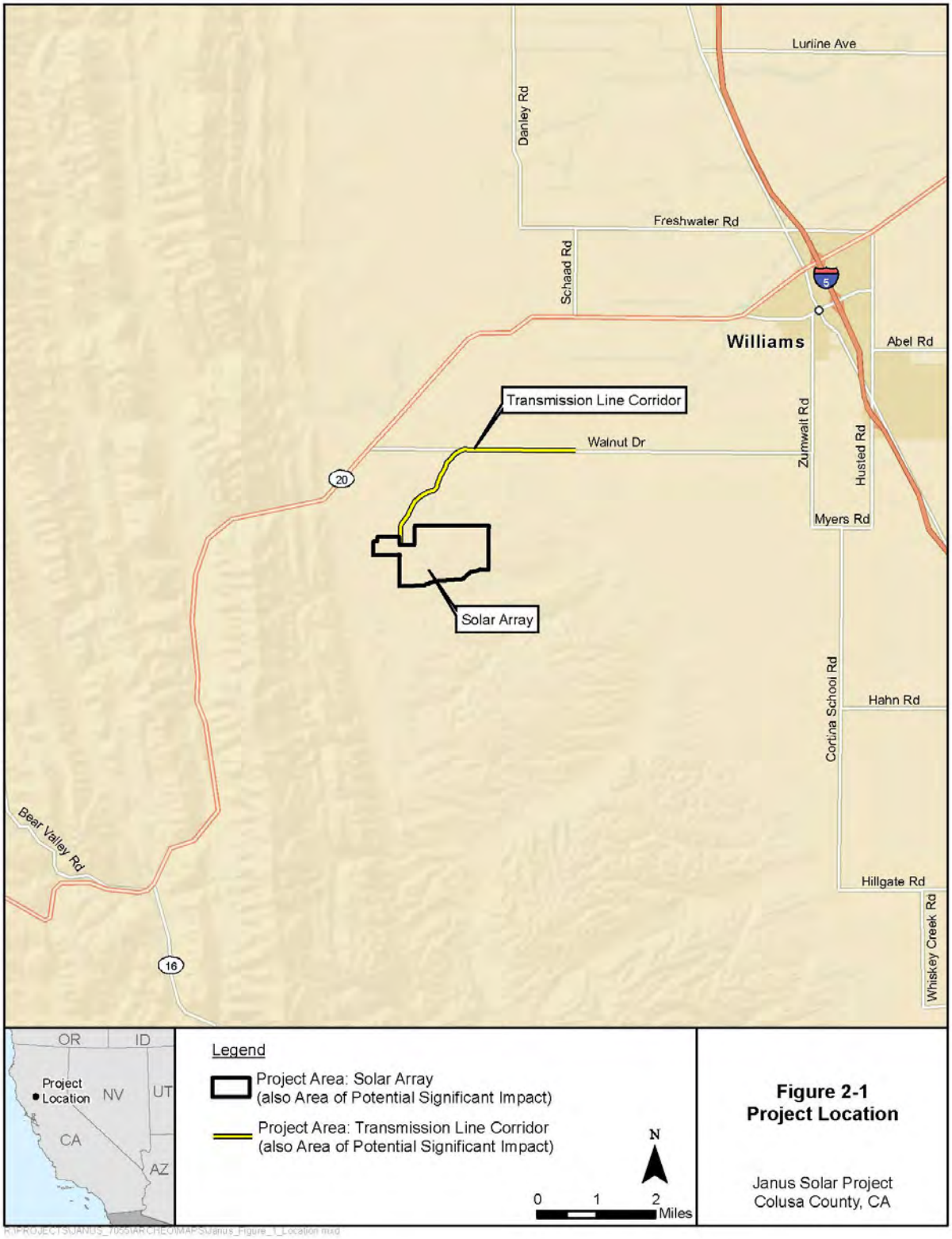


Figure 2-1 Project Location

2.3 EXISTING SETTING

2.3.1 On-site Land Uses

The Project site consists of rangeland designated as Agriculture Upland in the Colusa County General Plan and zoned Foothill Agriculture (FA) by Colusa County. The gen-tie line from the Project site insects land designated as Agriculture Upland and Agriculture General and zoned as FA and Exclusive Agriculture (EA). The Project site has also been deemed as Farmland of Local Importance by the California Department of Conservation. However, the Project site is not considered to be Prime or Unique Farmland.

2.3.2 Surrounding Land Uses

The surrounding land use is rural. Properties are currently being used for cattle grazing, agriculture, and open space. The closest residence is approximately 100 feet to the south of the Project site, and agricultural buildings occur to the west on the opposite side of Spring Valley Road.

2.4 PROJECT OBJECTIVES

The Applicant has identified the following Project Objectives:

1. Establish a PV solar power-generating facility of a sufficient size and configuration to produce up to 80 MW_{AC} of electricity at the POI in a cost-competitive manner.
2. Assist California utilities in meeting their obligations under California's Renewable Portfolio Standard (RPS) Program and Senate Bill 100 (SB 100), which calls for 100 percent of all electricity sold in California to come from carbon-free resources by 2045, including 60 percent renewables by 2030.
3. Assist California utilities in meeting their obligations under the CPUC's Energy Storage Framework and Design Program.
4. Provide for the economically viable, commercial financeable, and environmentally beneficial use of the site's water-limited agricultural capacity.
5. Develop a site in proximity to transmission infrastructure in order to minimize environmental impacts; and
6. Facilitate grid integration of intermittent and variable PV solar generation and minimize line losses associated with off-site storage by collocating battery storage at the PV solar facility site.
7. Develop a solar power generation facility in Colusa County, which would support the economy by investing in the local community, creating local construction jobs, and increasing tax and fee revenue to the County.

2.4.1 Description of the Project

The Project consists of three major components: a solar energy generating facility, energy storage system, and the generation tie-line (Figure 2-2). The solar facility would include arrays of solar PV modules (or panels) and support structures, direct current (DC) electricity to alternating current (AC) electricity power inverters and transformers or power conditioning stations, and an on-site substation. Other solar facility components would include access roads, perimeter fences, telecommunications infrastructure, a meteorological data collection system, signage, lighting, stormwater facilities, and an operations and maintenance building. See Section 2.4.1.1 for details about the proposed solar facility.

Up to 5 acres of the solar facility site would be dedicated to the BESS. The BESS would be located adjacent to the on-site substation and contained within steel cabinets or housings. See Section 2.4.1.2 for details about the proposed BESS.

The on-site substation would connect to the existing Cortina Substation via an approximately 3-mile-long, 60 kV gen-tie line strung on approximately 59 new poles of up to 80 feet in height. The gen-tie line also would include underground fiber optic line for communications. See Section 2.4.1.3 for details about the gen-tie line that would connect the Project to the grid.

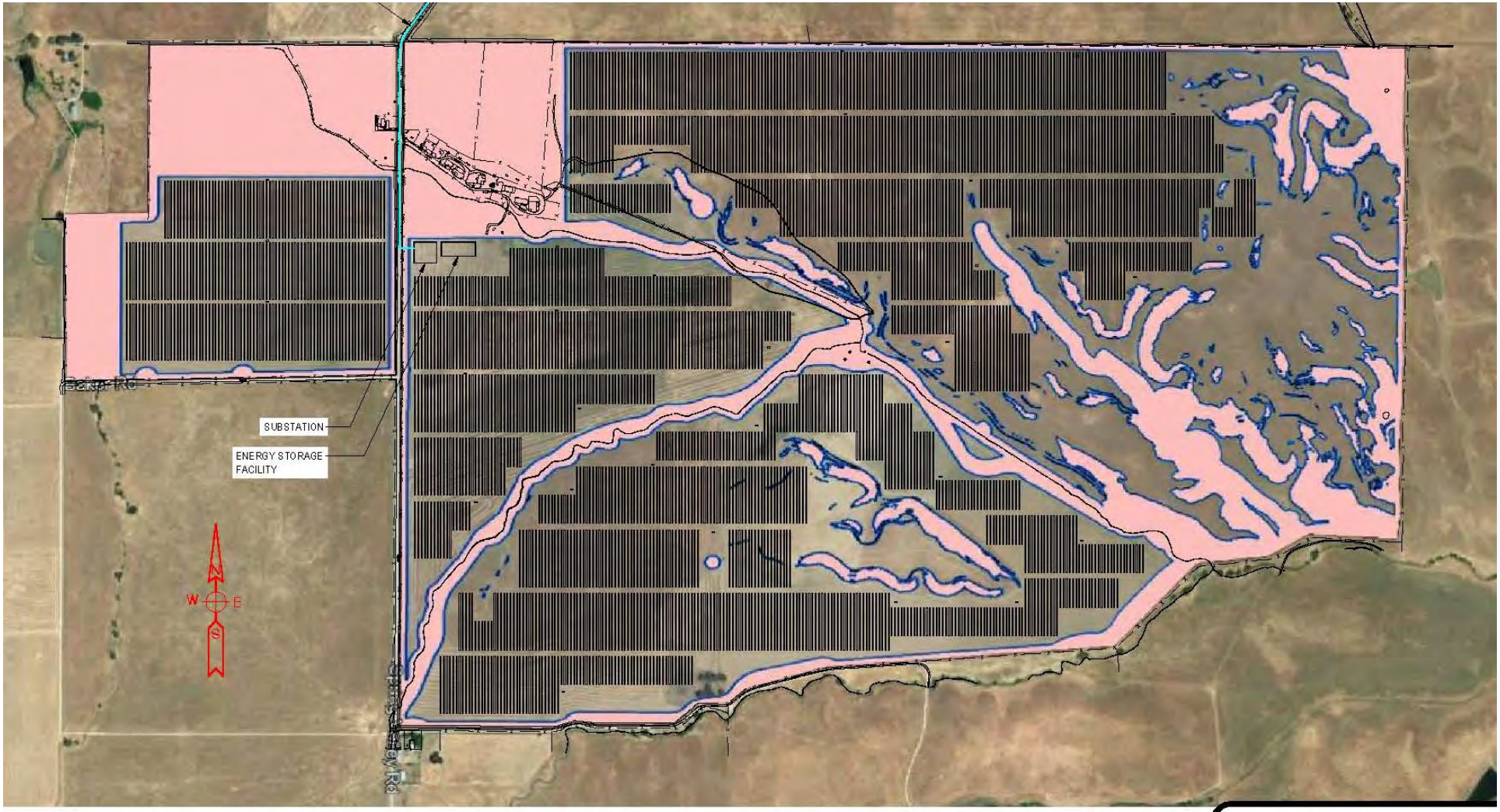
2.4.1.1 Solar Facility

2.4.1.1.1 Solar PV Generating Components

The solar facility would consist of PV solar modules (also known as panels) arranged into arrays supported by a racking system and tracker units that track the sun. A typical tracker section detail is provided in Figure 2-3. The PV modules on the trackers convert sunlight into electricity. When modules are mounted on tracking devices, they are referred to as trackers or tracker blocks. The trackers are organized in rows in a uniform grid pattern or solar array. The Project would include approximately 196,000 solar PV modules in multiple solar arrays interconnected to form a utility-scale PV system.

The modules may be constructed of glass encasing P-/N-type mono crystalline silicon, poly crystalline silicon, thin film or bifacial technology. Final panel selection would be determined at the detailed Project-engineering phase. The PV modules would be dark blue or black in color, with anti-reflection coating or minimal light reflection. A plastic binding material and metal frame would provide structural rigidity. The solar modules would be self-contained, durably constructed units designed to withstand exposure to the elements for a period of 35 years or longer. The solar modules would be electrically connected and grounded. The solar facility would be designed in accordance with local and state codes and regulations.

The Project would utilize a single-axis tracking system designed to optimize power production of the modules by ensuring proper orientation to the sun both daily and seasonally. It captures more solar radiation and is more restrictive in the terrain slope or site constraints than a fixed tilt system. Metal piers driven into the ground by a pile-driving machine would support the single-axis tracking systems. Pier placement would begin with a precise surveyed layout, ensuring proper positioning of the remaining tracker assembly parts. The top of each pier would bear a pier cap and bearing


SUBSTATION
ENERGY STORAGE FACILITY
N
W
E
S
NOT FOR CONSTRUCTI

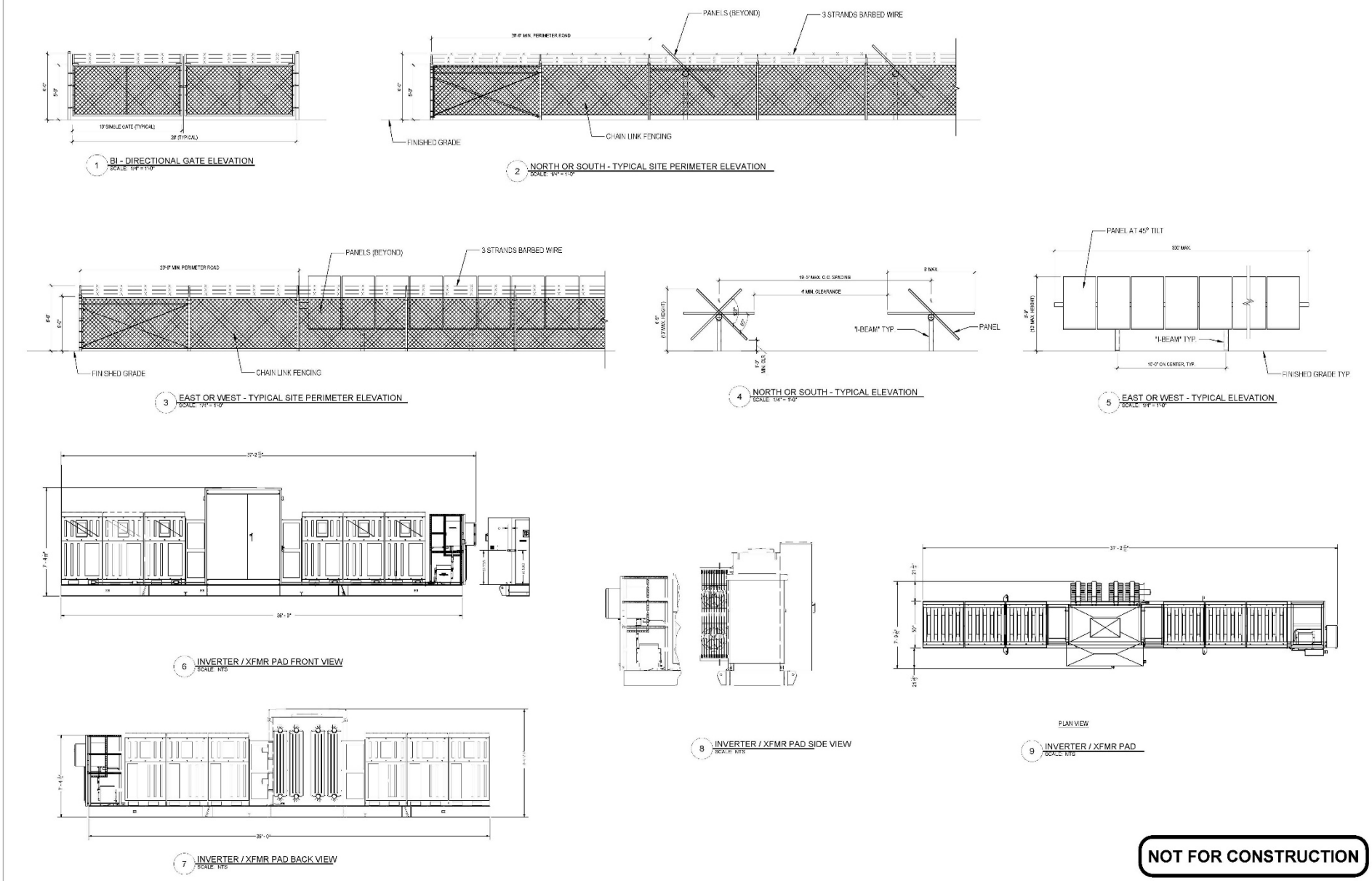


Figure 2-3 Typical Elevations and Details

assembly to support and allow proper movement of the torque tube assembly.[3] Single-axis tracking systems require a drive system that provides directional force to the torque tube. This can be accomplished with either a mechanical or hydraulic drive arm and tube assembly that "pushes and pulls" the torque arm through its range of motion or by a geared assembly that redirects rotational force to the tubes. Both approaches require a small geared motor or hydraulic system mounted on a pile support or pad strong enough to move the system through its daily range of motions.

Each tracking assembly would consist of steel posts on which the frames for the PV modules rest. Each tracker would hold PV modules mounted on this metal framework structure and range between 6 and 13 feet above grade, depending on the topography. The trackers would be separated by sufficient distance to accommodate maintenance personnel and pursuant to design parameters that meet applicable Colusa County fire safety requirements.

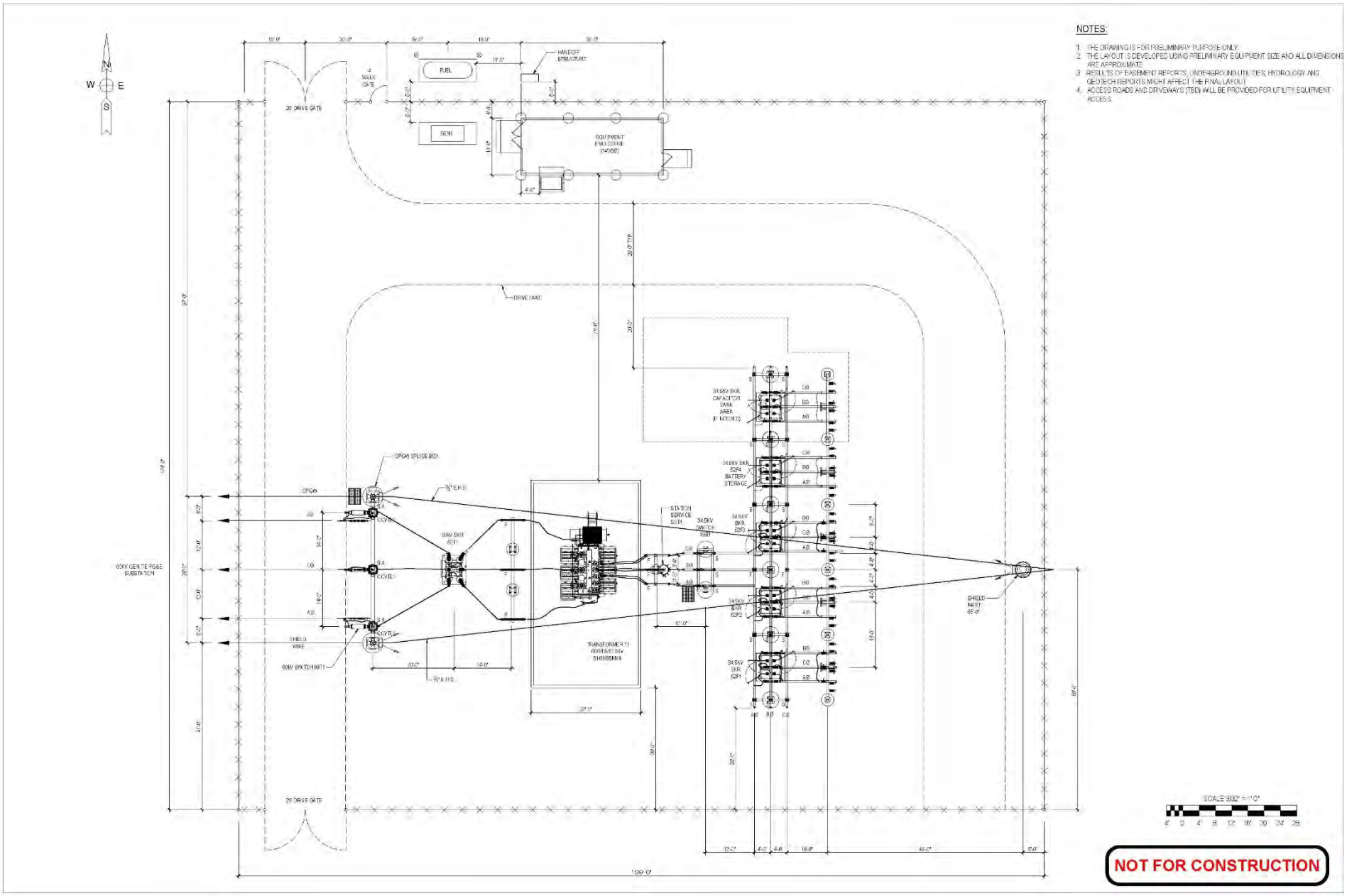
Individual PV tracker panels would be connected together in series to create a "string" of trackers carrying DC electricity using a combiner box. Inverters in the power conditioning stations (PCS) would convert the DC electricity produced by the trackers to AC electricity. There are central or string PV inverters and separate battery inverters for an AC-coupled energy storage facility. Each PCS would consist of inverter stations and a transformer approximately 10 feet in height above grade set on concrete or steel foundations. An inverter skid elevation section (including the inverter, transformer and switchgear) is shown in Figure 2-3. The PCS transformers then step-up the AC electricity to the appropriate collection level voltage (34.5 kV) for movement to the Project substation and eventual delivery to the electrical grid. The number of trackers connected to each of the PCSs would vary with module output relative to inverter size and desired output from the PCS.

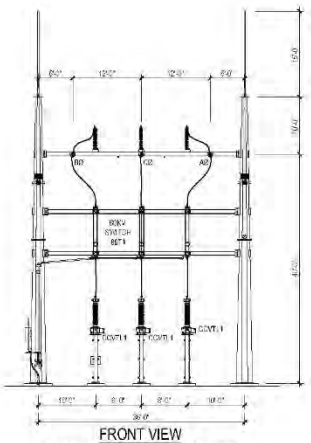
The Project would require multiple PCSs, depending on final design details. The number of trackers connected to each of the PCSs varies with tracker output relative to inverter size and desired output from the PCS. The PCSs would be placed strategically throughout the Project site.

2.4.1.1.2 Project Substation

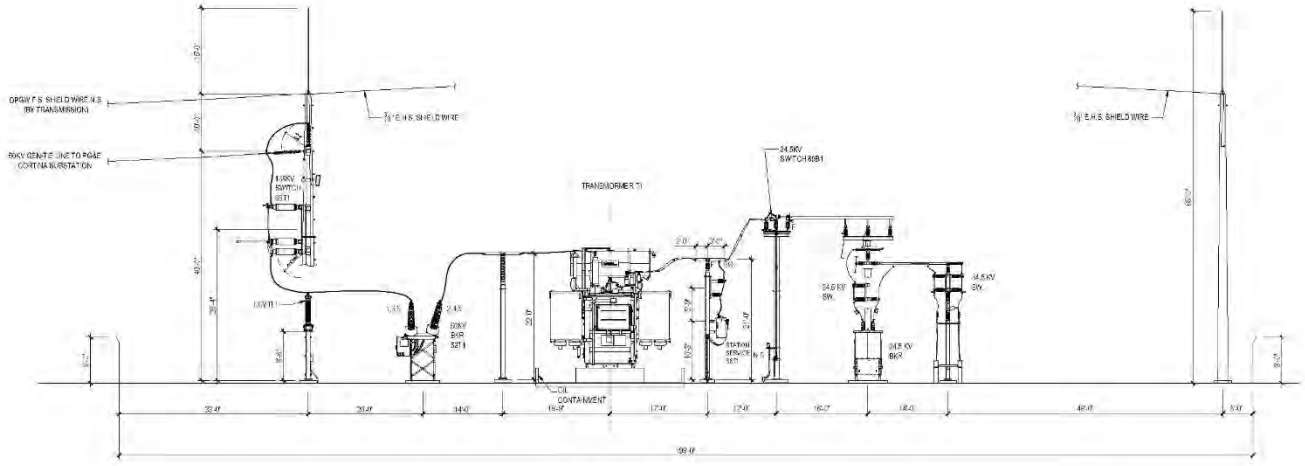
A Project substation would be constructed in the northwest portion of the Project site; however, the final location is dependent upon final design. The substation would include a generator step-up transformer to increase the output voltage from the module blocks (34.5 kV) to the voltage of the 60-kV gen-tie line, protective relay and metering equipment, utility and customer revenue metering, lightening arrestor, disconnect, circuit breaker and a station service transformer that would provide power to the substation and its weatherproof control house. The overall footprint of the Project substation is anticipated to be approximately three acres with gen-tie structures up to 80 feet in height. An emergency generator for use in the event that the regional transmission system fails also would be at the substation; this emergency generator would provide emergency power until the regional transmission system restores operations. The generator would be powered by propane or diesel. A fuel tank would be immediately adjacent to the generator. Details about the substation (including a plan view and elevations of the substation, and an elevation of the control enclosure) are provided in Figures 2-4 and 2-5. The substation would have access to

[3] In a PV solar array, torque tube assemblies rotate incrementally, causing the solar panels to tilt and remain oriented for better exposure to the sun.


NOTES:
1. THE DRAWING IS FOR PRELIMINARY PURPOSE ONLY.
2. THE LAYOUT IS DEVELOPED USING PRELIMINARY EQUIPMENT SIZE AND ALL DIMENSIONS ARE APPROXIMATE.
3. RESULTS OF EASEMENT REPORTS, UNDERGROUND UTILITIES, HYDROLOGY AND GEOTECH REPORTS MIGHT AFFECT THE FINAL LAYOUT.
4. ACCESS ROADS AND DRIVEWAYS (TBD) WILL BE PROVIDED FOR UTILITY EQUIPMENT ACCESS.
N
W
E
S
20' DRIVE GATE
FUEL
GEN1
HANDOFF STRUCTURE
DRIVE LANE
OPGW SPLICE BOX
OPGW
69KV GEN-TIE PG&E SUBSTATION
69KV SWITCH RISER
SHIELD WIRE
TRANSFORMER T1
SHIELD MAST
NOT FOR CONSTRUCTION



FRONT VIEW
60KV DEAD-END STRUCTURE



ELEVATION VIEW

NOT FOR CONSTRUCTION

communication systems in the area to comply with Federal Energy Regulatory Commission/California Independent System Operator utility monitoring and control requirements. Compliance may be accomplished by underground lines, aboveground lines, or wirelessly.

2.4.1.1.3 Other Solar Facility Infrastructure

2.4.1.1.3.1 Operation and Maintenance Building

Operation and maintenance activities would take place in an operation and maintenance (O&M) structure located in the northwest portion of the solar facility site. The O&M facility would include office space and storage. There would also be portable toilets. Water would be trucked to the site. An equipment storage area and a gravel parking lot for employees, visitors, and emergency response vehicles would be located adjacent to the building, such that the entire O&M footprint would occupy an area up to 1 acre in size adjacent to the substation.

2.4.1.1.3.2 Stormwater Retention

The site drainage is designed to follow the natural drainage pattern. None of the Project facilities, including fences and panel posts, would prevent stormwater flow. No on-site detention facilities are planned.

2.4.1.1.3.3 Meteorological Data Collection System

The Project would require several meteorological data collection systems. The systems would include a variety of instruments to collect meteorological data, which would be mounted at various locations throughout the facility. The meteorological data would be collected at the level of the solar panels.

2.4.1.1.3.4 Telecommunications Facilities

The Project would require connection with the existing local telecommunication service. A telecommunication line would be comprised of fiber optic cable and/or a telephone line, which would be installed above and below ground, either attached to existing distribution lines or installed immediately adjacent to the Project substation. The telecommunication routes would use new poles and below ground installations. Below ground installations are usually installed 24–48 inches below grade. Aboveground lines are typically placed 6 feet below existing distribution lines or on new, adjacent wooden poles. Telecommunications may also be transmitted by a small wireless microwave antenna mounted on a pole up to 90 feet tall, which would be placed at the Project substation.

2.4.1.1.3.5 Fencing, Lighting, and Signage

Existing barbed wire fencing would be replaced with metal fencing 6–8 feet in height along the site perimeter as needed. The substation would be surrounded by a metal fence topped with barbed wire to comply with electrical codes.

Infrared security cameras, motion detectors, and/or other similar technology may be installed to allow for monitoring of the Project site through review of live, 24/7 footage. A security company also may be contracted by the Applicant for security purposes. Should the security system detect the presence of unauthorized personnel, a security representative would be dispatched to the site, and appropriate local authorities would be notified.

Project lighting would be installed to allow for maintenance and security. Lights would be installed at the substation. All lighting would be directed downward to minimize the potential for glare or

spillover onto adjacent ownerships. All lighting would conform to applicable Colusa County outdoor lighting codes.

Project signage is proposed to allow for the identification of the Project owner and for safety and security purposes. Signage is proposed to be installed on the fence or ground mounted in the vicinity of the main entry gates. Signage would identify the Project operator and owner and would provide emergency contact information. Small-scale signage also would be posted at the main entry gates and intermittently along the perimeter fencing on all exterior parcel boundaries, to indicate “No Trespassing” and “Private Property” for security purposes. All signage would conform to Colusa County signage requirements. No landscaping is proposed.

2.4.1.1.3.6 Access and Circulation

Access to the Project area would be via a main entrance on Spring Valley Road. An access gate would be provided at the site entry. Internal service roads would be built to access the Project, for ingress and egress to the Project site, to individual Project components, and between the solar array rows to facilitate installation, maintenance, and cleaning of the solar panels. Roads throughout the arrays would provide access to the inverter equipment pads and substation. The perimeter roads would be a minimum of 18 feet wide and interior roads would be a minimum of 9 feet wide and would be sufficient for Colusa County and California Department of Forest and Fire Protection (CAL FIRE) access.

2.4.1.2 Energy Storage System

The BESS is expected to be located adjacent to the substation. Batteries would be contained within metal enclosures. The color of the metal enclosure typically varies by manufacturer and has not yet been determined. The maximum combined footprint for the BESS would be 5 acres. Key components of the BESS include batteries and battery storage system enclosures and controllers, converters, inverters, and transformers. Figure 2-6 provides an overview of the BESS layout.

Sealed battery modules would be installed in self-supporting racks electrically connected either in series or parallel to each other. The individual battery racks would be connected in series or a parallel configuration to deliver the BESS energy and power rating. The BESS enclosures would house the batteries as well as the battery storage system controllers. The BESS enclosures would also house required heating, ventilation, and air conditioning (HVAC) and fire protection systems.

One of several available lithium ion technologies is proposed, although alternatives (such as flow batteries) may be considered given continuing rapid technological change in the battery industry. Selection of the lithium ion sub-chemistry for the Project would take into consideration various technical factors, including safety, life span, energy performance, and cost. In general, a lithium ion battery is a rechargeable battery consisting of three major functional components: a positive electrode made from metal oxide, a negative electrode made from carbon, and an electrolyte made from lithium salt. Five major lithium ion battery sub-chemistries are commercially available:

- Lithium nickel cobalt aluminum (NCA)
- Lithium nickel manganese cobalt (NMC)
- Lithium manganese oxide (LMO)
- Lithium titanate oxide (LTO)
- Lithium iron phosphate (LFP)

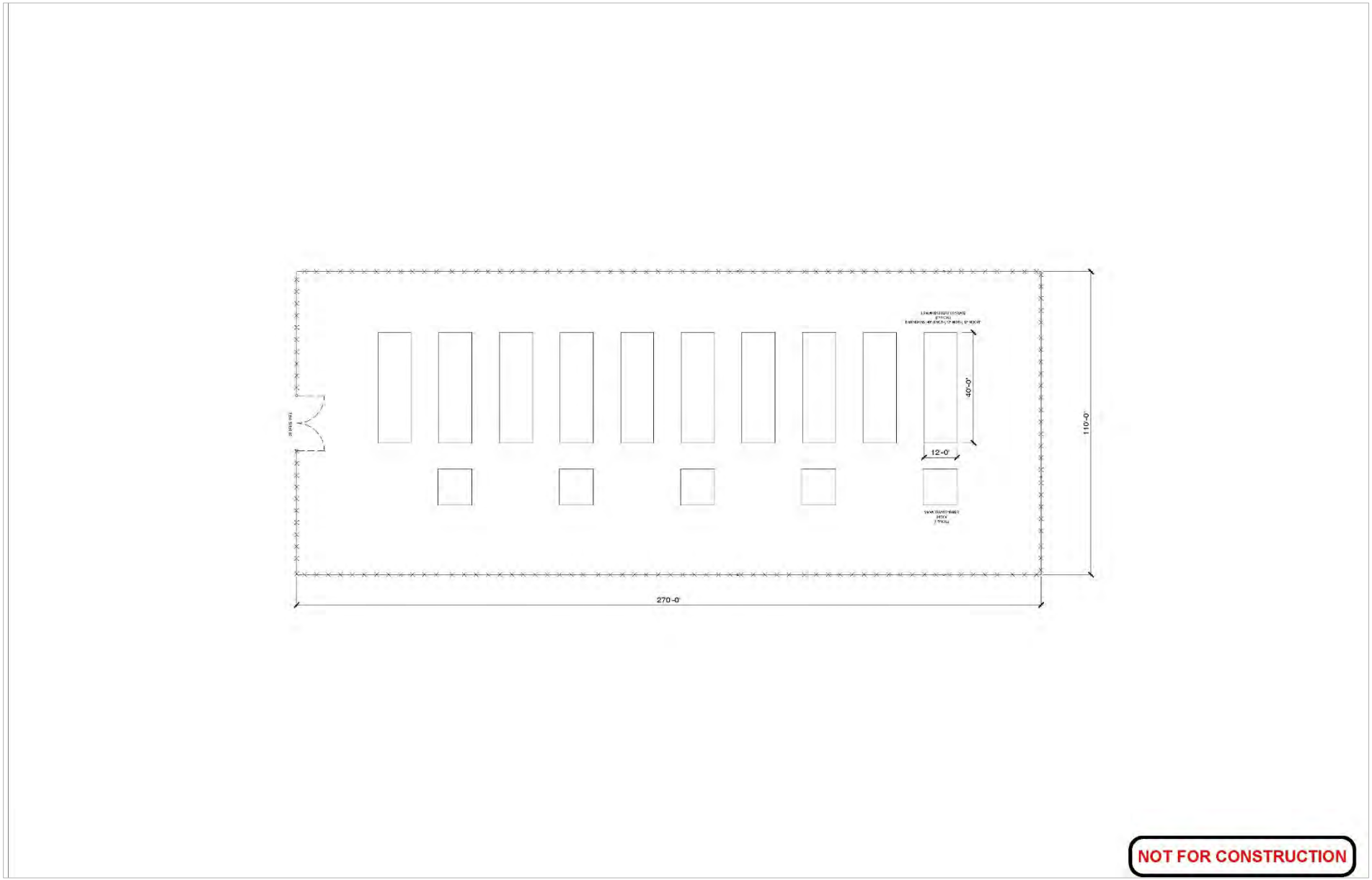


Figure 2-6 Energy Storage System Layout

The proposed BESS would be designed, constructed, operated, and maintained in accordance with existing federal, state, and local regulations for health and safety, including the California Fire Code. The Applicant would select batteries or energy storage system providers that comply with the application-specific codes, standards, and regulations for the siting, construction, and operation of the storage system.

The BESS would contain a safety system that would be triggered automatically when the system senses imminent fire danger. The fire safety system inside each enclosure would shut down the unit if any hazard indicators are detected. If the safety system detects a potential issue as detected by the smoke and temperature sensors, the batteries would be automatically de-energized by opening the electrical contacts, and HVAC units and fans would be shut off.

2.4.1.3 Gen-Tie Line

Energy from the proposed solar arrays would be collected at the Project substation and transmitted to the existing PG&E-owned Cortina Substation. In order to interconnect the Project with the substation, the Applicant would construct a new 60 kV gen-tie line that would extend from the northeast corner of the Project site at the on-site substation, extending about 2 miles within the County's ROW on Spring Valley Road to reach Walnut Drive. At Walnut Drive, the transmission line will collocate with Colusa County road ROW for approximately 2 miles on existing, retrofitted, or new poles to the POI at Cortina substation. Along this route, the gen-tie line would cross the Colusa-Tehama Canal, administered by USBR. The gen-tie line would include tubular steel poles of up to 80 feet in height. The Applicant's gen-tie construction would terminate at the PG&E Cortina Substation property line.

2.4.1.4 Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission line that extends from the Cortina Substation property line to the new bay station within the existing footprint of the PG&E facility. All PG&E improvements will be constructed within the existing Cortina Substation footprint.

Network upgrades include a grounding system, steel support structures, outdoor lighting, and outlets, and a disconnect switch. Improvements would also include installation of underground conduits, pull boxes, and junction boxes. Civil foundation improvements consisting of site surfacing and grading would be incorporated within the substation facility.

Interconnection facilities to be constructed at the Cortina Substation would include a circuit breaker, disconnect switches, surge arresters, and a dead-end/pull off structure. A line current differential relay scheme and breaker failure and reclosing relays would be installed. Improvements would also include the installation of fiber termination for the gen-tie line.

2.4.1.5 Water and Wastewater

2.4.1.5.1 Water

Construction

During construction, approximately 15,000,000 gallons of non-potable water (approximately 46 acre-feet[af])[4] are anticipated to be required for dust suppression and other purposes. Water

[4] One acre-foot (af) of water equals 325,851 gallons – approximately the amount needed to cover an acre (roughly a football field) of ground one foot deep.

would be trucked to the site and would be sourced from the City of Williams Public Works Department. Domestic water for use by employees would be provided by the construction contractor through deliveries to the site.

Operation and Maintenance
The average water use during the Project's O&M phase is estimated to be approximately 1 af per year for PV solar panel washing and general maintenance. The need for panel washing would be infrequent (e.g., months-to-years between washings) and determined based on operating considerations, including actual soiling of the PV panels and any expected benefit from cleaning.

Decommissioning
During decommissioning and site reclamation, the Project would require approximately 46 af for uses similar to those needed during construction.

2.4.1.5.2 Wastewater
Nominal liquid (human) waste would be generated during construction, operation and maintenance, and decommissioning. Portable restroom facilities would be provided for workers during construction and operation. Sanitary waste is expected to average up to 30 gallons per day during operation.

2.4.1.5.3 Solid Waste
The majority of waste generated during construction would be non-hazardous and consist primarily of cardboard, wood pallets, copper wire, scrap metal, common trash, and wood wire spools. Construction waste materials such as metal and wood would be separated from the waste stream and recycled whenever feasible. Non-recyclable construction waste would be placed into commercial trash dumpsters located on-site. Dumpsters would be collected as needed by a commercial service and delivered to the Maxwell Transfer Station. Construction would generate an average of approximately 20 cubic yards of solid waste per week over the period of construction.

During O&M activities, the Project would generate a small amount of waste, such as broken or rusted metal, defective or malfunctioning equipment, electrical materials, empty containers, other miscellaneous solid waste, and typical refuse from the O&M staff. Less than one cubic yard of waste per week would be accumulated in an on-site dumpster that would be collected weekly by a commercial waste management service.

The waste generated during decommissioning and site reclamation would be similar to that generated during demolition and construction: primarily non-hazardous and recycled whenever feasible. Damaged panels would be disposed of in compliance with applicable requirements. Non-recyclable waste would be disposed of in a landfill.

2.4.1.5.4 Hazardous Waste and Hazardous Materials
During all Project phases, activities may involve the transportation, use, or temporary storage of a variety of hazardous materials in the ordinary course of work, such as batteries, hydraulic fluid, diesel fuel, insulation oil for the transformers, grease, lubricants, paints, solvents, and adhesives. For example, batteries included in energy storage systems under non-routine conditions may generate toxic and flammable gases. Further, batteries may be considered hazardous waste in California when they are discarded, whether or not they are rechargeable. Accordingly, the battery

modules included in the BESS eventually would be disposed of in accordance with the applicable hazardous waste requirements. Electrical equipment used by the Project, such as inverters and transformers, typically contain dielectric insulating fluid. The insulating fluid, which would be formulated from either vegetable or mineral oil, would be contained in the equipment and not routinely handled by O&M staff. Tracker motors and drive supports could require periodic application of grease at the interface of moving parts. During construction, diesel fuel and gasoline may be stored on-site for refueling equipment and vehicles. These materials would be stored and handled in a manner to prevent accidental release. Standard construction practices would be observed such that any incidental releases would be appropriately contained and remediated as required by regulation.

All hazardous materials would be used, stored, and disposed of in accordance with the manufacturers' specifications and consistent with applicable regulatory requirements. Workers would be trained to engage in safe work practices and to properly identify and handle any hazardous materials on-site.

2.4.1.5.5 Hazards

Combustible vegetation or agricultural products on and around the Project boundary would be actively managed by the Project owner or its affiliates during both the construction and operation phases of the Project to minimize fire risk. Combustible products would be either limited in height or removed. Additionally, the Project would include firebreaks around the site boundary in the form of access roads subject to County standards.

2.4.1.6 Construction

Project construction would consist of two major stages. The first stage would include site preparation, grading, and preparing staging areas and on-site access routes. The second stage would involve assembling the trackers and constructing electrical interconnection facilities.

2.4.1.6.1 Grading and Site Preparation

Grubbing and grading would occur on the site to achieve the required surface conditions. Site preparation may include application of pre-emergent herbicides formulated to minimize impacts on wildlife. Application would be in accordance with federal, state, and County regulations and would be applied by a state-licensed pesticide applicator.

2.4.1.6.1.1 Temporary Construction Facilities and Staging Areas

During construction, materials would be placed within the Project site boundaries adjacent to the then-current phase of construction. To prevent theft and vandalism, materials would be secured within fenced areas at all times. A storage container might be used to house tools and other construction equipment. Portable toilet facilities would be installed for use by construction workers. Waste disposal would occur in a permitted off-site facility.

2.4.1.6.2 Solar Facility Construction and Installation

On-site roads would be constructed per the recommendations of a site-specific geotechnical report with a durable surface or surfaced with compacted gravel. At the footing for the PCS pads, existing soil would be scarified and recompacted following recommendations of a Project-specific, site-specific geotechnical report to be prepared in late 2021.

Installing solar panels would require driving steel piles about 6 to 13 feet into the ground. In areas where the geotechnical analysis has determined that piles might not be feasible or cost-effective, conventional foundations (such as isolated spread foundations or continuous footings) might be used.

During construction, a variety of equipment and vehicles would operate on the Project site. All equipment and vehicles would comply with the noise requirements of the Colusa County General Plan Noise Standards.

2.4.1.6.2.1 Substation Construction

The Project substation would be separately fenced to provide increased security around the medium- and high-voltage electrical equipment. The substation area would be excavated, a copper grounding grid would be installed, and then the foundations for transformers and metal structures would be installed. The area first would be backfilled, compacted and leveled, and then aggregate rock base would be applied. Equipment would be installed and connected, including transformers, breakers, bus-work, and metal dead-end structures. The transformers contain an insulating oil: the oil tank would either be filled at the manufacturing facility and shipped to the Project site or the transformers could be shipped with the oil tank empty and filled on-site. The substation would have a site control center equipment building, which would house substation and plant control equipment, meters, battery or generator backup, and other electrical equipment which would be located in or next to the substation.

2.4.1.6.2.2 O&M Area

Operation and maintenance activities would take place in a new O&M structure anticipated to be located in the northwestern portion of the Project site, contingent upon final design. The driveway and parking area for the building would be compacted native soil and/or road base aggregate.

2.4.1.6.3 Energy Storage System

Upon delivery of the BESS equipment to the site, a crane or forklift would be used to place the factory-assembled enclosures on steel pile, grade-beam, or concrete foundations located at BESS facility location. The location for the facility would depend on final design. Each energy storage system would include power conditioning systems, electrical wiring, switching, and transformers and connect to the 34.5 kV bus in the Project substation. The electrical interconnection would be either underground or overhead, or a combination of both.

2.4.1.6.4 Gen-Tie Line Construction and Stringing

Interconnecting the Project with the existing Cortina Substation would require new tubular steel poles of up to 80 feet in height. The precise locations of the new poles would be finalized during the Project's final design process. During construction, the location of each new pole would be surveyed and staked. Foundations for each pole would be constructed, the transmission poles erected, and transmission pole arms and insulators installed. After transmission pole installation occurs, conductor stringing and terminations would be performed to ensure that the new 60 kV gen-tie line is operating correctly. A fiber optic communication line may be strung overhead on the poles between the Project's on-site substation and the Cortina Substation.

Construction of the new transmission poles would require temporary construction areas at each new structure and at locations required for conductor stringing and pulling operations. Each stringing and pulling operation consist of a puller set-up positioned at one end and a tensioner set-up with wire reel stand truck positioned at the other end.

The dimensions of the area needed for the wire stringing set-ups associated with wire installation are variable and depend upon terrain. For this Project, these activities are expected to require an area approximately 100-feet in length within the road ROW.

2.4.1.6.5 Construction Schedule and Workforce

Construction is anticipated to begin in September 2022 with operation commencing in third quarter of 2023. The analysis in this EIR assumes that construction would occur during an 11-month period.

2.4.1.6.5.1 Hours

Construction would occur primarily during daylight hours, Mondays through Fridays 7:00 am to 7:00 pm and potentially 8:00 am to 8:00 pm on Saturdays and Sundays, in compliance with the Colusa County General Plan Noise Standards. If nighttime work hours or work on weekends is necessary, such work could be scheduled consistent with Colusa County General Plan and County code provisions. Construction requirements may require some nighttime activity for material and equipment delivery and/or where the schedule has been delayed due to weather or other events. Nighttime activities would be performed with temporary lighting, which would be directed downward to minimize impacts to neighboring properties and wildlife in the Project vicinity.

2.4.1.6.5.2 Workforce

The on-site construction workforce would consist of laborers, craftspeople, supervisory personnel, and support personnel. The on-site assembly and construction workforce is expected to reach a peak of approximately 200 workers; the average number of workers on-site is anticipated to be approximately 50 to 150, depending on the construction activity. On average, it is anticipated that 25 percent of worker trips to the site would be in carpools. Workers would commute to the site from nearby communities such as Williams or Colusa, and due to the number of workers required for the Project size, it is anticipated that some would travel from more-distant areas in the Sacramento Valley area.

2.4.1.6.6 Construction Access, Traffic, and Equipment

Construction vehicles would access the Project site from Interstate 5 to East Camp Road, then via Walnut Drive to Spring Valley Road. Internal service roads would be built to access the Project, for ingress and egress to the Project site, to individual Project components, and between the solar array rows to facilitate installation, maintenance, and cleaning of the solar panels. Roads throughout the arrays would provide access to the inverter equipment pads and substation. The perimeter roads would be a minimum of 18 feet wide and interior roads would be a minimum of 9 feet wide and would be sufficient for Colusa County and CAL FIRE access.

Vehicle use of area roadways resulting from Project construction activities would be limited to the 11-month construction period, as workers and materials are transported to and from the Project site. Construction workers would be encouraged to carpool in order to minimize vehicle trips.

Approximately 15 daily truck trips and 150 daily worker vehicle trips are anticipated during the peak of construction. The expected maintenance would generate little traffic during operation. O&M vehicles would include light duty trucks (e.g., pickup, flatbed) and other light equipment for maintenance and module washing. Heavy equipment would not be utilized during normal

operation. Large or heavy equipment may be brought to the facility infrequently for equipment repair or replacement or vegetation control.

Typical equipment during construction would include scrapers, dozers, tractors, backhoes, excavators, and other common types of construction equipment.

2.4.1.6.7 Stormwater and Dust Control

The site drainage is designed to follow the natural drainage pattern and none of the Project facilities, including fences and panel posts, would prevent typical stormwater flow. No on-site detention facilities are planned. Site preparation and construction activities would be performed in accordance with a Stormwater Pollution Prevention Plan (SWPPP), or similar plan as appropriate, which incorporates stormwater Best Management Practices to reduce the adverse effects of erosion and sedimentation. Such practices would include, for example, the use of water trucks to manage dust; silt fencing, straw bales and temporary catch basins, and inlet filters to control stormwater; and truck tire muck shakers, or similar devices, to prevent mud and debris from being carried onto roadways.

2.4.1.7 Operation and Maintenance

Once constructed, the Project would operate seven days per week, 365 days per year. The facility would be operated by Janus Solar PV, LLC or an affiliated company. Approximately two-to-three, permanent, on-site staff are anticipated.

Security would be maintained through installation of a metal fence along the perimeter of the site.

Only occasional, on-site maintenance is expected to be required following commissioning. Initially, personnel would likely visit the Project site daily or weekly, but it is anticipated that eventually maintenance visits would be reduced to once a month or less. O&M activities would require up to three workers performing visual inspections, monitoring plant performance, executing minor repairs, and responding to needs for plant adjustment. On intermittent occasions, the presence of 5 to 30 workers may be required for repairs or replacement of equipment, panel cleaning, and other specialized maintenance. However, due to the self-operating nature of the facility, such actions would likely occur infrequently.

The expected maintenance would generate little traffic during operations. The areas surrounding the substation would be graveled and would have adequate space for parking several vehicles. O&M vehicles would include light duty trucks (e.g., pickup, flatbed) and other light equipment for maintenance and module washing. Heavy equipment would not be utilized during normal operation. Large or heavy equipment may be brought to the facility infrequently for equipment repair or replacement or vegetation control. Water, wastewater, and solid waste demands would be as described in Section 2.4.1.4.

2.4.1.8 Decommissioning and Site Reclamation

The Project has an expected useful life of 35 years. It is expected to be operational in 2023 and to remain in operation through 2058. It is possible that the useful life of the Project could be extended through maintenance of existing equipment or with equipment replacement and could remain in operation beyond 2058 with further County review and approval. If operations at the site are terminated, the facility would be decommissioned. The Project site would be returned to

a stable condition comparable to pre-Project conditions in accordance with applicable land use regulations in effect at that time.

Many components of the solar facility and energy storage system are recyclable. Panels typically consist of silicon, glass, and an aluminum frame. Tracking systems typically consist of steel and concrete, in addition to motors and control systems. All of these materials can be recycled. Numerous recyclers for the various materials to be used on the Project site operate in Colusa and other nearby counties. Metal, scrap equipment, and parts that do not have free-flowing oil can be sent for salvage. Equipment containing any free-flowing oil would be managed as waste and would require evaluation. Oil and lubricants removed from equipment would be managed as used oil, which is a hazardous waste in California.

2.4.1.9 Applicant Proposed Measures and Design Features

The Applicant proposes to take certain actions for the purpose of reducing the potential significance of anticipated environmental impacts of the Project. These measures are elements of the Project, either as a specific design feature or as a plan developed by the Applicant. Where the analysis of individual resources relies on these plans or design features to reduce anticipated effects, the relevant section so notes. By contrast, mitigation measures are not elements of the Project and are structured in accordance with the criteria in CEQA Guidelines Section 15370.

2.4.1.9.1 Solar Technology – Glare and Lighting

The Project would use solar panels that have a low profile (typically 6 feet high, but generally no more than 13 feet high at the highest point during the day) to minimize visual impacts. Solar panels are designed to be anti-reflective. Nighttime lighting impacts would be minimized by including only small lighting features that are equipped with on/off switches or motion detectors so that the amount of light emitted would be comparable to that emitted from domestic fixtures on local homes.

2.4.1.9.2 Wildlife-friendly Design Features

Fence posts would be capped to prevent potential entrapment of birds or other small species. Further, the design of new overhead transmission and communications lines and structures would follow the most recent Avian Power Line Interaction Committee guidance to reduce the potential for avian injury and mortality from collisions and electrocution. The proposed use of motion-activated security lighting (rather than lighting that would remain on from dusk to dawn) would reduce adverse impacts to nocturnal species, potentially including foraging, sheltering, mating and reproducing, communicating, and migrating behaviors.

2.4.1.9.3 Emergency Response Plan

An Emergency Response Plan would be prepared in order to train local emergency response personnel during development and operation of the facility. The plan will be completed in accordance with existing state regulations (Health and Safety Code [HSC] § 25504(b); 19 California Code of Regulations [CCR] §2731; 22 CCR §66262.34(a)(4)). The contents of the Emergency Response Plan would comply with existing state regulations and include the following components and involve training for the local fire responders:

- Developed in consultation with Fire Department and BESS supplier
- Defined roles and responsibilities

- Potential emergency scenarios including fire
- On-site training of fire personnel and on-site Project staff
- Training for local first responders, including monitoring of fire from a safe distance using infrared cameras until temperature of the affected enclosure cools to ambient temperature

2.4.1.9.4 Compliance with Applicable Laws and Standards

The Applicant would comply with all applicable laws and standards, including, but not limited to, those governing the use, storage, and disposal of hazardous materials; worker training and safe work practices; air quality, water quality, and Energy Storage Systems more generally. Similarly, site preparation and construction activities would be performed in accordance with a SWPPP, or similar plan that incorporates stormwater BMPs to reduce the adverse effects of erosion and sedimentation, and herbicide would be applied by qualified personnel following product label instructions and applicable regulations. Compliance with these requirements would avoid or reduce potential adverse environmental impacts to soil, air quality, surface water and groundwater quality, human health, fire-related risk, and other environmental considerations.

2.4.2 Permits and Approvals

Permits and approvals that could be required to construct, operate and maintain, and decommission the Project include the following:

- Colusa County – Use Permit, Encroachment Permit for gen-tie construction.
- Colusa Certified Unified Agency – Hazardous Materials Business Plan
- Central Valley Regional Water Quality Control Board – General Permit for Discharges of Storm Water Associated with Construction Activity, Construction General Permit Order 2009-0009-DWQ, Section 401 Clean Water Act Permit, if required.
- California Department of Fish and Wildlife – Streambed Alteration Agreement, if required; Incidental Take Permit for state-listed species (ITP), if the Applicant elects to obtain one.
- California Public Utilities Commission – authorizations pursuant to General Order 131-D may be required for PG&E's network upgrades, interconnection facilities, and gen-tie line construction at the Cortina Substation.
- United States Bureau of Reclamation – Authorization for Use, for gen-tie crossings at the Tehama-Colusa Canal.
- United States Army Corps of Engineers – Section 404 Clean Water Act Permit, if required.
- United States Fish and Wildlife Services – ITP for federally-listed species, if required.
- Williams Fire Authority

2.5 CUMULATIVE PROJECTS

Cumulative impacts refer to the combined effect of proposed Project impacts with the impacts of other past, present, and reasonably foreseeable future projects. According to the CEQA Guidelines Section 15355 "cumulative impacts" refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of

separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the proposed Project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. In addition, as stated in the CEQA Guidelines Section 15064 (h)(4), "the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed Project's incremental effects are cumulatively considerable."

The CEQA Guidelines Section 15130 (b)(1) states that the information utilized in an analysis of cumulative impacts should come from one of two sources, either:

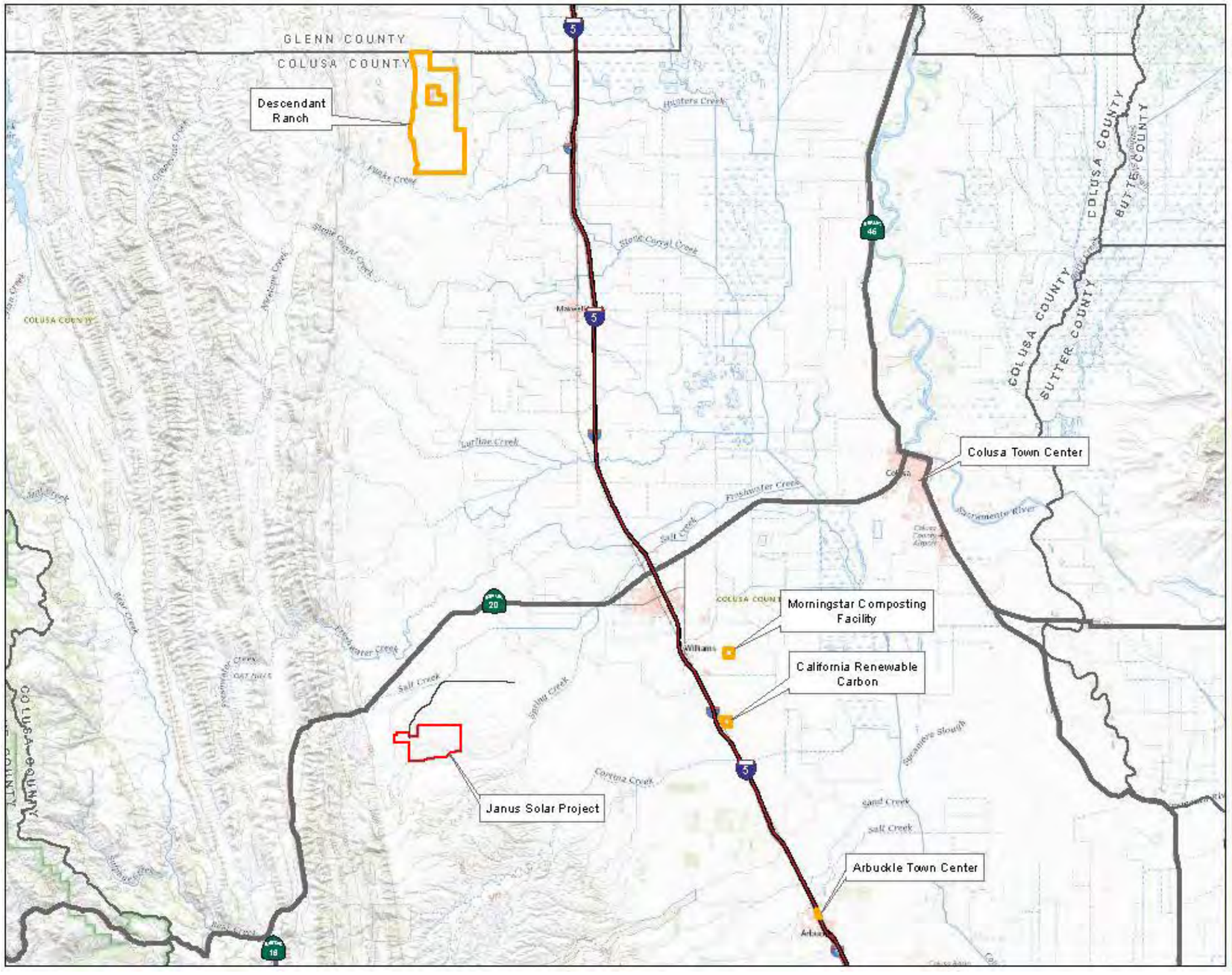
1) A list of past, present and probable future projects producing related cumulative impacts, including, if necessary, those projects outside the control of the agency; or
2) A summary of projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions.

The cumulative analysis provided in this Draft Program EIR utilize the first method and is based on a list of future projects provided by the County. Cumulative project land uses and intensities are provided in Table 2-1 and shown on Figure 2-7.

Table 2-1. Cumulative Projects

Cumulative Project	Location	Description
NextEra Descendant Ranch Solar Project	Dirks Rd, Stonyford, CA 95979	The project would include a 2,552-acre, 500 MW solar facility and BESS of up to 500 MW. The Project would include solar module blocks, as well as related and supporting facilities including an electrical collection system, a substation, a BESS, transmission line, and O&M facility, on-site service roads, gates and security fencing, and temporary laydown and construction areas.
California Renewable Carbon	6229 Myers Road, Williams, CA 95987	The project would include the repurposing of an existing facility (formerly the Olam tomato processing plant) to construct a new renewable biocarbon production facility. The new facility will convert biomass into biocarbon products. The new facility will use self-generated biogas for process energy as well as generate and export renewable electricity to the electric grid. In addition to the reuse of the existing facility, the project involves establishment of a new electrical generation tie line (gen-tie line) for export of electricity to the grid that would involve upgrades to either the Williams distribution line or Wadham power line.
Morningstar Composting Facility	2211 Old Highway 99W, Williams, CA 95987	The facility would process approximately 25,000 cubic yards of compost, including raw feedstock, active and finished compost, during the tomato processing season (approximately June 1 to November 30). Raw feedstocks are to include tomato processing wet waste. Mushrooms, rice hulls and almond shells.
Arbuckle Town Center	1125 and 1135 Old Highway 99, Arbuckle, CA 95912	This project is currently under construction and consists of a convenience store, gas station, car wash, and fast food restaurant.

Cumulative Project	Location	Description
Colusa Town Center	1601 State Highway 20 and 1301 Wescott Road, Colusa, CA 95932	This project includes the potential development and operation of a mid-size shopping center with multiple retail businesses, including an anchor grocery or drug store, gas station/car wash, 3 fast-food restaurants with drive-through service windows, speculative retail business suites on approximately 6 acres of property, and related Highway 20/45 and local roadway/ intersection improvements.



Janus Solar Project

Colusa County, CA

Figure 2-7 Cumulative Projects

Project Area

Janus Solar Project Area

Proposed Gen-tie

Scale is 1:170,000 when printed at 11"x17"

NOT FOR CONSTRUCTION

3 ALTERNATIVES

3.1 PURPOSE OF THE PROJECT ALTERNATIVES

CEQA requires that an EIR describe a range of reasonable alternatives to the project, or to the location of the project, which could feasibly avoid or lessen any significant environmental impacts while substantially attaining the basic objectives of the project. An EIR should also evaluate the comparative merits of the alternatives. This chapter describes potential alternatives to the proposed Project that were considered, identifies alternatives that were eliminated from further consideration and reasons for dismissal, and analyzes available alternatives in comparison to the potential environmental impacts associated with the proposed Project.

Key provisions of the CEQA Guidelines pertaining to the alternatives analysis are summarized below:

- The discussion of alternatives shall focus on alternatives to the proposed Project or its location that are capable of avoiding or substantially lessening any significant effects of the proposed Project, even if these alternatives would impede to some degree the attainment of the proposed Project objectives, or would be more costly.
- The No Project Alternative shall be evaluated along with its impact. The No Project analysis shall discuss the existing conditions at the time the NOP is published. Additionally, the analysis shall discuss what would be reasonably expected to occur in the foreseeable future if the proposed Project were not approved, based on current plans and consistent with available infrastructure and community services.
- The range of alternatives required in an EIR is governed by a “rule of reason”; therefore, the EIR must evaluate only those alternatives necessary to permit a reasoned choice. Alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the proposed Project.
- For alternative locations, only locations that would avoid or substantially lessen any of the significant effects of the proposed Project need to be considered for inclusion in the EIR.
- An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative.

The range of feasible alternatives is selected and discussed in a manner to foster meaningful public participation and inform decision-making. Among the factors that may be taken into account when addressing the feasibility of alternatives are environmental impacts, site suitability, economic viability, availability of infrastructure, general plan consistency, regulatory limitations, jurisdictional boundaries, and whether the proponent could reasonably acquire, control, or otherwise have access to an alternative site. An EIR need not consider an alternative whose effects cannot be reasonably identified, whose implementation is remote or speculative, or that would not achieve the basic project objectives.

3.2 PROJECT OBJECTIVES

The Applicant has identified the following Project Objectives:

1. Establish a PV solar power-generating facility of a sufficient size and configuration to produce up to 80 MW (AC) of electricity at the POI in a cost-competitive manner;
2. Assist California utilities in meeting their obligations under California's Renewable Portfolio Standard (RPS) Program and Senate Bill 100 (SB 100), which calls for 100 percent of all electricity sold in California to come from carbon-free resources by 2045, including 60 percent renewables by 2030;
3. Assist California utilities in meeting their obligations under CPUC's Energy Storage Framework and Design Program;
4. Provide for the economically viable, commercial financeable, and environmentally beneficial use of the site's water-limited agricultural capacity;
5. Develop a site in proximity to transmission infrastructure in order to minimize environmental impacts; and
6. Facilitate grid integration of intermittent and variable PV solar generation and minimize line losses associated with off-site storage by collocating battery storage at the PV solar facility site.
7. Develop a solar power generation facility in Colusa County, which would support the economy by investing in the local community, creating local construction jobs, and increasing tax and fee revenue to the County.

3.3 ALTERNATIVES CONSIDERED AND ELIMINATED

Section 15126.6(c) of the *CEQA Guidelines* requires that an EIR identify alternatives that were considered for analysis but rejected as infeasible and briefly explain the reasons for their rejection.

According to the CEQA Guidelines, the following factors may be used to eliminate alternatives from detailed consideration: the alternative's failure to meet most of the basic project objectives, the alternative's infeasibility, or the alternative's inability to avoid significant environmental impacts.

Alternatives to the proposed Project should include those that would obtain most of the Project objectives (listed above), while reducing one or more of the significant and unavoidable impacts of the propose Project. In addition, CEQA requires that the No Project be evaluated and requires that an Alternative Site Location be considered when appropriate.

3.3.1 Conservation and Demand Side Management

The County considered whether a conservation and demand side management could provide a viable potential alternative to the Project. Conservation and demand side management consists of a variety of strategies to reduce electricity use and shift electrical demand to times of the day when energy demand is lower. It includes increased energy efficiency and conservation, building and appliance standards, fuel substitution, and load management. Implementation of conservation and demand side management techniques could result in a reduction in demand thus reducing the need for new generation, and thereby serve the region's growing demand for power. While conservation and demand side management approaches are part of a sustainable energy future, this potential alternative was not carried forward for more detailed consideration because it would not meet most of the basic objectives of the Project and would be infeasible from a technical perspective as well as speculative.

Increased energy efficiencies and reductions in energy demand would not meet Project objectives. For example, they would not generate up to 80 MW of PV solar electricity at the point of interconnection; would not assist California utilities in meeting their obligations under either California's RPS and SB 100, or the CPUC's Energy Storage Framework and Design Program; and would not provide for the economically viable and environmentally beneficial use of a site with physically impaired agricultural capacity.

This potential alternative also was not carried forward because reliance on conservation and demand side management alone would be a technically infeasible alternative to the Project and would be speculative. California's long-term Energy Efficiency Strategic Plan (adopted by the CPUC in September 2008 and updated in January 2011) provides an integrated framework of goals and strategies for saving energy through 2020 (CPUC 2008, 2011, 2020). The plan champions specific programmatic initiatives for key market sectors (i.e., commercial, residential, industrial, and agricultural) and a series of "big bold energy efficiency strategies" including all new residential construction being zero net energy by 2020 and all new commercial construction being zero net energy by 2030. Given the aggressiveness of these goals, it would be speculative to assume that incremental savings beyond them could be achieved. While energy efficiency efforts have been effective and will continue to be part of California's overall energy future, conservation and demand-side management alone will not be sufficient to address California's rising energy demand.

3.3.2 Alternative Sites Feasibility Analysis

The Applicant used a number of criteria to screen alternative sites for feasibility to function as a utility-scale solar facility site. These criteria included the following:

- Sufficient incoming solar radiation
- Flat terrain (less than 15 percent slope across the majority of the site)
- Minimal environmental constraints, such as significant wetlands, protected species habitat
- Site devoid of "permanent" structures, including orchard trees
- Enough acreage for desired project size
- Contiguous acreage
- Capacity of point of interconnection
- Distance to point of interconnection

Additional details are provided on several of these criteria below.

3.3.2.1 Site Structures and other Features

Property that has existing structures or significant infrastructure on it is avoided for purposes of developing a new utility-scale solar project. In California, this criterion is extended to include orchard trees. A landowner who has made the investment to plant fruit- or nut-bearing trees typically expects to reap the revenue from future harvests over a long period of time and is not interested in leasing or selling the property at a price that can be supported by a solar project.

Additionally, sites that support federal or state threatened or endangered species or that have wetlands and floodplains that would reduce the acreage available for the solar facility may preclude development on a specific property.

3.3.2.2 Project Capacity

The Applicant's business plan for constructing projects in central and southern California involves developing projects of a sufficient size to maximize economies of scale, which helps drive down the price of the generated electricity. The economy-of-scale benefits are manifested in two ways: 1) lowering the price per unit paid for mass-produced components; and 2) offsetting the cost of fixed-price items with greater long-term project revenues.

Regarding the per-unit cost of plant components, a project developer or contractor purchasing items such as PV modules, inverters, and cabling will be able to negotiate a lower price (on a per-unit basis) for larger orders. This allows a larger project to be built at a lower cost per MW of capacity than a smaller project, which results in a lower price for the offered electricity.

Other costs associated with constructing a utility-scale solar project are relatively fixed and do not scale directly with the size of the project. These costs include interconnection facilities (components at the utility substation—such as breakers, meters, and controls—necessary to physically connect the new facility to the existing electrical grid), and the project transformer. Assuming a 33 MW project and a 100 MW project have similar fixed costs, the negative impact of these fixed costs on project economics will be much greater for the smaller project. Both hypothetical projects would need to recover these up-front costs with the revenue received by selling electricity, but the smaller project will produce only one-third of the power of the larger project over its lifetime, and therefore must increase the price of its electricity by a greater amount than the larger project does to recoup the same investment in fixed costs.

3.3.2.3 Project Acreage

Based on the competitive market for utility-scale solar electricity in California, the fact that only the lowest-priced projects will secure power purchase agreements, and the economic benefits of larger projects over smaller projects, the Applicant has proposed a project with 80 MW of total capacity. Using single-axis tracking technology, the required acreage for a solar project in California ranges from 6 acres to 9 acres per MW. For the Project, this yields a project footprint ranging from 480 acres to 720 acres. Developers prefer to have extra acreage available, since setback requirements, existing easements, public safety access requirements, and other real estate or environmental constraints can "use up" acreage that would otherwise be available for the project. Nonetheless, in the interest of capturing a wide range of potential alternative projects sites, a minimum acreage criterion of 700 acres was set.

It is crucial that the entire site to be used for the project be contiguous property. Breaking the site into two or more fragments is infeasible. This is due to the inefficiency of tethering together multiple project areas across a large distance, as well as cost and reliability considerations.

Every electrical component of a PV project is physically wired to the other components. Electricity generated at each PV module is wired to an inverter (typically sited with a transformer), from the inverter/transformer to combiner boxes, from the combiner boxes to the project substation, and from the project substation to the point of interconnection on the electric grid. Electricity is lost in the form of heat as it is transported through wires. As the components are spread out further, the cost of wiring increases and the amount of electricity delivered from the project simultaneously decreases.

Building a single project across multiple sites also adds considerable cost to the project. Overhead (or buried) electrical lines must be constructed between the sites, which adds construction cost.

The project must secure a right-of-way from one or more additional landowners along the path of these lines, which adds complexity and development costs. The contractor building the project must mobilize for construction on multiple sites and deal with the logistics of moving people, equipment, and materials between multiple sites during construction. All of these cost considerations exacerbate the negative effects of the line losses incurred by delivering power over greater distances.

Finally, reliability risks increase when portions of a project are tethered together over a considerable distance. Burying the interconnecting wiring between sites would be prohibitively expensive. Therefore, the feeder lines connecting the project sites would likely be installed aboveground on poles. Overhead lines are subject to outages. If an overhead line fails, a portion of the project would be off-line while repairs are made. The repairs would add to the operational expense of the project, and the project would lose revenue the entire time that the line is out for repairs.

3.3.2.4 Capacity of Point of Interconnection

A power plant can deliver energy to the greatest number of potential customers in California by connecting to the electric grid controlled by the California Independent System Operator (CAISO). In Colusa County, the CAISO-controlled grid includes all PG&E-owned substations and transmission lines.

Interconnecting a new electricity generating facility to the CAISO grid involves submitting an application and a study deposit. CAISO and the participating transmission owner (PG&E, in the case of the Project) then conduct a series of transmission engineering studies to determine the extent of upgrades to the grid that are required to interconnect the new project safely and reliably. Upgrades, if required, may include the following: expansion of a substation, new equipment at one or more substations, re-conductoring existing transmission lines, installing telecommunications and protection equipment at various locations, etc. The initial cost responsibility for the transmission upgrades typically falls to the project. Some upgrade costs are refunded to the project after it is constructed; some upgrade costs are not.

The extent of the upgrades required are a function of the project size, or capacity, as well as the specifications and capacity of the existing grid facilities at and near the POI. Some POIs can accept little to no new electricity before upgrades are triggered. Other POIs happen to be “overbuilt” and can accept large new sources of electricity before upgrades are triggered.

New proposed generating facilities in California can very easily trigger transmission upgrade costs in the tens of millions of dollars. However, not all proposed projects trigger upgrade costs of this magnitude. Some projects may trigger modest or low POI costs, and these projects will have a cost advantage compared to other projects and are more likely to secure PPAs in the wholesale electricity marketplace. The reality is that developments with high interconnection costs are quickly terminated, since money spent during the development phase is not recovered unless and until the project is constructed and operating. Given the number of projects that are under development and vying for a limited number of PPAs, those projects with higher transmission costs will not succeed, and are therefore not pursued by developers.

CAISO and the participating transmission owners have the final say on the scope and cost of upgrades to connect a new project at a certain POI. However, project developers can estimate

the cost to interconnect new projects to POIs by commissioning their own studies. The Applicant eliminated a number of potential POIs by conducting this type of study.

3.3.2.5 Generation Tie Line Length

New generating facilities require a gen-tie to physically connect the project site to the POI. This is typically an overhead electrical line installed on poles. The project must secure a right-of-way from one or more additional landowners along the path of the gen-tie, which adds complexity and development costs. As described above, reliability concerns also increase as the length of an overhead line increases.

3.3.2.6 Review of Alternative Sites

The Applicant evaluated the alternative sites listed in Table 3-1 and deemed these sites infeasible to develop for utility scale solar.

3.4 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

In addition to the mandatory No Project Alternative, a project that focused on distributed, rooftop solar throughout Colusa County, a project on the same parcels but with a smaller footprint, and an offsite project in northeastern Colusa County were considered to potentially lessen or avoid significant environmental effects resulting from implementation of the proposed Project. Alternatives considered in this Draft EIR include:

3.4.1 No Project Alternative

According to the *CEQA Guidelines* (Section 15126.6(e)(3)(b)), the No Project Alternative is defined as the "circumstance under which the project does not proceed." This analysis will discuss the existing conditions at the time the NOP is published (the environmental baseline) and what could be expected to occur if the proposed Project is not built.

The Project site is located in Colusa County's Foothill Agriculture (F-A) zone and the gen-tie occurs in the F-A and Exclusive Agriculture (E-A) zones. Under the No Project Alternative, the Project site would continue to be used for agricultural grazing. If the Project is not approved, the land could be used for another approved use under the Colusa County Zoning Ordinance. Currently there are no competing proposals for the Project site that would be one of the other approved uses. The analysis of the No Project Alternative assumes that a no Project situation where the existing agricultural use would be continued as it exists under its current conditions.

In the No Project alternative, the Project site would continue to be used for agricultural grazing and the existing environmental setting would be maintained. Changes to the setting, including changes to the landscape (visual resources, habitat, and land use/agriculture); Project related impacts such as construction noise, traffic, and air emissions would not occur; and potential ground disturbance impacts to cultural and tribal resources, wildlife habitat would not occur. Additionally, the environmental benefits of renewable energy generation would not be realized from solar development of the site.

Table 3-1. Alternative Site Feasibility Screening

Site	Size (Acres)	Slope >15 percent	Sufficient Acreage	Threatened and/or Endangered Species Habitat Present	Floodplains and/or Wetlands Present	Feasible Gen-Tie Length	Owner Interested in Leasing/Selling
1	494	No	No	Yes (Giant Garter Snake)	No	Yes	No
2	560	No	Yes	Yes (Giant Garter Snake)	Yes	Yes	No
3	345	No	No	Yes (Giant Garter Snake)	Yes	Yes	No
4	143	No	No	Yes (Giant Garter Snake)	No	Yes	No
5	470	No	No	No	No	Yes	No
6	503	No	Yes	No	No	Yes	No
7	361	No	No	No	No	Yes	No
8	940	Yes	Yes	Yes (Swainson's Hawk)	No	Yes	No
9	440	No	No	Yes (Swainson's Hawk)	Yes	Yes	No
10	716	Yes	Yes	Yes (Swainson's Hawk)	Yes	Yes	No
11	106	Partial	No	Yes (Swainson's Hawk)	Yes	Yes	No

Under the No Project Alternative, all project related impacts would be avoided due to the lack of development of the Project site. There would be no new impacts to the environment. No feasibility issues have been identified which would eliminate the No Project Alternative from consideration; however, the No Project Alternative would not meet any of the Project Objectives. Additional analysis of the alternatives is included in Chapter 5.

3.4.2 Distributed Solar Alternative

The Distributed Solar Alternative would develop solar PV systems on the existing rooftops throughout Colusa County, which would increase energy efficiency and renewable energy availability. Under this alternative, solar PV panels would be mounted on existing rooftops, such that no new land would be disturbed. It is anticipated that a similar amount of rooftop acreage (approximately 768 acres) would be required for the Project's 80 MW of solar generating capacity. Similar to the proposed Project, the Distributed Solar alternative would be designed to operate year-round using solar PV technology to convert solar energy into direct current electricity. The energy generated could be used for on-site uses with the potential to be shared using a community solar arrangement that allows multiple users to share power from a single local source. No new construction of transmission facilities or electrical substations would be required for the power generated by distributed solar PV systems.

3.4.3 Reduced Acreage Alternative

Under the Reduced Acreage Alternative, the site size would be reduced by 342 acres (from 1,024 acres to 682 acres). See Figure 3-1. The Reduced Acreage Alternative site has been designated as Agriculture Upland (AU) and is zoned for Foothill Agriculture (F-A) and Exclusive Agriculture (E-A); otherwise, would be as described in Chapter 2, *Project Description*.

Compared to the Project, the Reduced Acreage Alternative would reduce the project's impacts to biological resources, cultural resources, and noise. Though none of these Project impacts are significant after mitigation, the Reduced Acreage Alternative, by reducing the acres of land disturbed and the proximity of noise-emitting facilities to offsite receptors, would reduce the potential for biological, cultural, and noise impacts compared to the Project. The Reduced Acreage Alternative also entail less surface disturbance, less construction dust, reduced construction and decommissioning emissions, and reduced demand for water. The Reduced Acreage Alternative would not meet the Project Objectives to generate 80 MW of electricity at the POI in a cost-effective manner (Project Objective 1). It would only generate up to 50 MW of electricity and would not be economically viable to develop or be commercially financeable (Project Objective 4) due to its reduced capacity, and it would generate less economic benefits to the County (Project Objective 7). It would be feasible, but not an efficient use of a site with low agricultural productivity. Additional analysis of the alternatives is included in Chapter 5.

3.4.4 Northeast Site Alternative

The Northeast Site Alternative would relocate the project to the Northeast Site, which consists of 15 contiguous parcels totaling approximately 917 acres and is located approximately 5 miles northeast of the Project site, on the north side of Highway 20 and just west of Williams. See Figure 3-2. The Northeast Site is prime farmland currently being cultivated for rice crops. The Northeast Site Alternative has been designated and zoned Exclusive Agriculture and Highway Service Commercial (C-H).

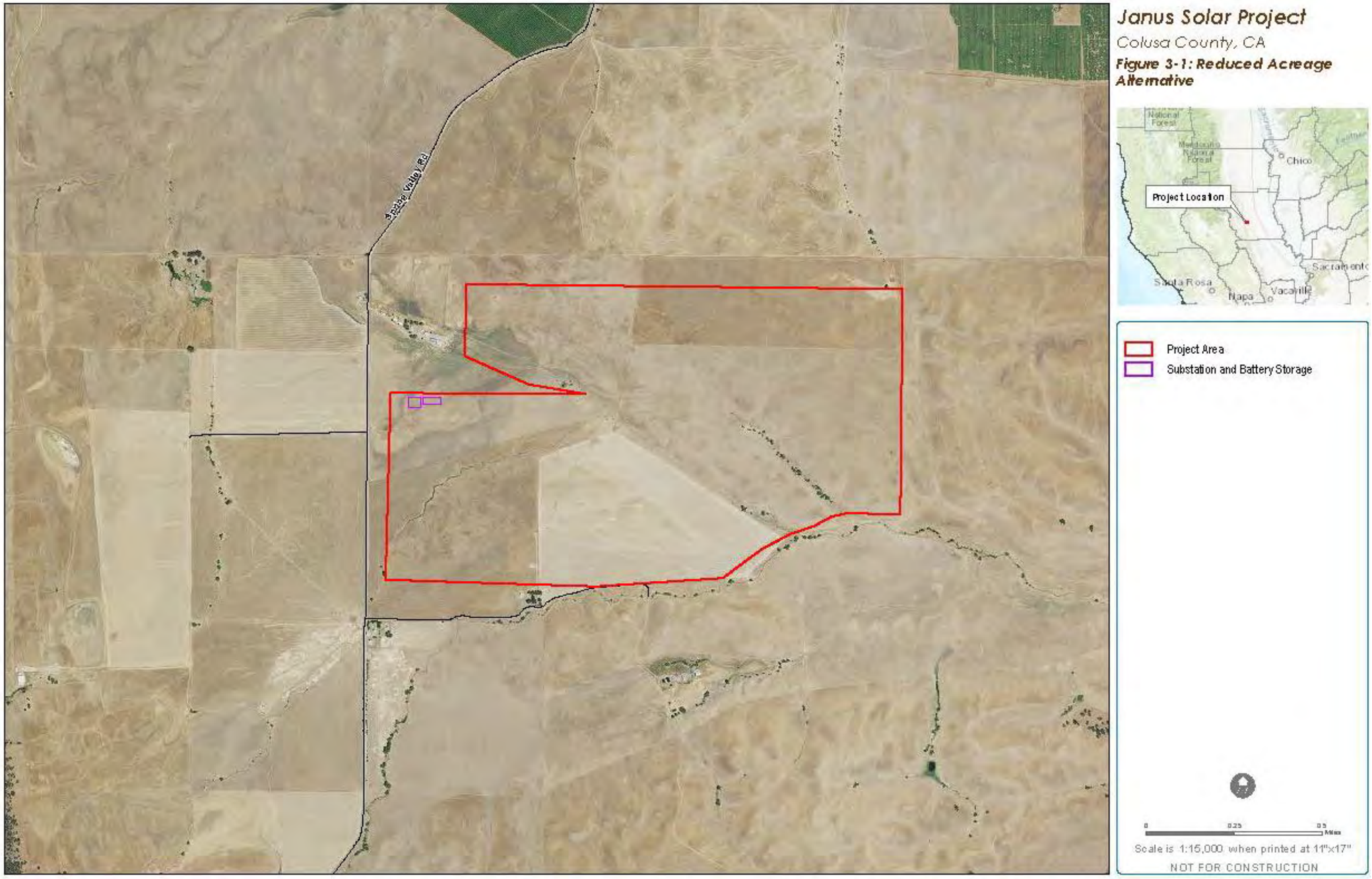


Figure 3-1 Reduced Acreage Alternative

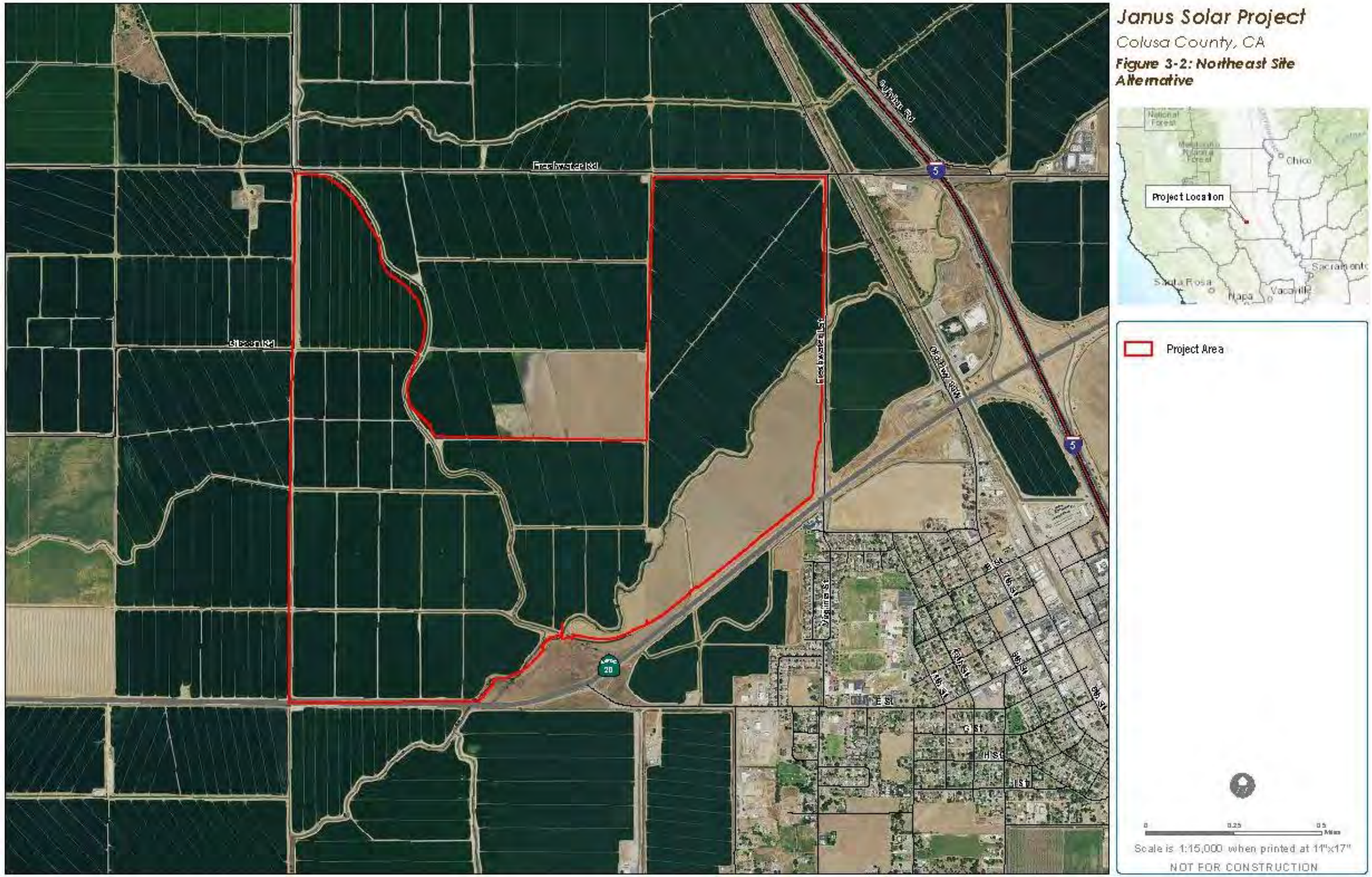


Figure 3-2 Northeast Site Alternative

The Northeast Site Alternative site size is approximately 107 acres smaller than the Project site; however, it is anticipated that the same amount of acreage would be used for solar and ancillary facilities as the Project (768 acres) in order to maximize the capacity to generate electricity. Due to the anticipated set-aside areas for giant garter snake (*Thamnophis gigas*) along the existing agricultural canals, solar arrays would be required to be distributed throughout the site rather than concentrated in a single area. The scattered distribution of solar arrays would result in less efficient production of electricity and a significant decrease in capacity compared to the Project's 80 MW. Compared to the Project, the Northeast Site Alternative is anticipated to have increased impacts to agricultural, and biological resources, due to its occurrence on prime farmland, and because it includes habitat for the federally and state threatened giant garter snake. Additional analysis of the alternatives is included in Chapter 5.

4.1 AGRICULTURE AND FORESTRY RESOURCES

This section identifies and evaluates issues related to Agriculture and Forestry Resources in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received scoping comments relating to Agricultural and Forestry Resources from the California Department of Conservation, and those comments have been incorporated into the EIR.

4.1.1 Existing Conditions

4.1.1.1 Agricultural Resources

The Project site largely consists of grazing land with some areas used for dryland crop production. The Project site is located in Colusa County's Foothill Agriculture (F-A) zone and the gen-tie occurs in the F-A and Exclusive Agriculture (E-A) zones (Colusa County 2014). The entire Project site has been classified as Farmland of Local Importance under the California Department of Conservation's Farmland Mapping and Monitoring Program. The Project site is surrounded by land that is also classified as Farmland of Local Importance. Orchards located north and northeast of the Project site are classified as Unique Farmland. Definitions of the Department of Conservation's farmland designations are provided in Section 4.1.2, *Regulatory Setting*.

The entirety of the Project site is included in a Williamson Act contract. The Williamson Act program is discussed in Section 4.1.2 below. Williamson Act-contracted parcels also surround the Project site.

4.1.1.2 Forestry Resources

The Project site does not contain any land defined as forest land (as defined by Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or land zoned Timberland Production (as defined by Government Code §51104(g)).

4.1.2 Regulatory Setting

4.1.2.1 Federal

No federal regulations pertain to the Project.

4.1.2.2 State

4.1.2.2.1 California Land Conservation Act of 1965

The California Land Conservation Act of 1965 (Williamson Act, Government Code §51200 et seq.) prevents farmland from conversion to other uses by offering owners of agricultural land a property tax incentive to maintain their land in agricultural use. The Williamson Act is a state program implemented at the county level that allows agricultural landowners to voluntarily and contractually agree to retain land included in an agricultural preserve[1] in agricultural or open space uses for a period of at least 10 years and, in return, to pay reduced property taxes. The term of the contract

[1] An agricultural preserve defines the boundary of an area within which a city or county would be willing to enter into Williamson Act contracts with landowners: The boundary is designated by resolution of the city council or board of supervisors with jurisdiction over the property. Agricultural preserves generally must be at least 100 acres in size.

automatically renews each year, such that unless it is specifically nonrenewed or cancelled, the contract always has a 10-year period horizon.

The most common method for withdrawing from a Williamson Act contract is filing a notice of nonrenewal, which can be initiated by either the land use agency or the landowner. Under this process, the contract is ended after a 9-year nonrenewal period, during which taxes gradually increase every year. A Williamson Act contract cancellation is an option under the circumstances and conditions set forth in Government Code §51280 et seq. In such cases, landowners may petition the board or council of their county or city for cancellation of the Williamson Act contract. The board or council may grant tentative cancellation only if it makes required statutory findings (Government Code §51282(a)), which are (1) that the cancellation is consistent with the purposes of the chapter and (2) that the cancellation is in the public interest.

California Government Code Section 51238 states that, unless otherwise decided by a local board or council, the erection, construction, alteration, or maintenance of electric and communication facilities, as well as other facilities, are determined to be compatible uses within any agricultural preserve. Government Code §51238 states that the board of supervisors may impose conditions on lands or land uses to be placed within preserves to permit and encourage compatible uses in conformity with Government Code §51238.1.

Further, Government Code §51238.1 allows a board or council to allow as compatible any use that without conditions or mitigations would otherwise be considered incompatible. However, this may occur only if that use meets the following conditions:

- The use would not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels on other contracted lands in agricultural preserves.
- The use would not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves. Uses that significantly displace agricultural operations on the subject contracted parcel or parcels may be deemed compatible if they relate directly to the production of commercial agricultural products including activities such as harvesting, processing, or shipping.
- The use would not result in the significant removal of adjacent contracted land from agricultural or open space use.

The board or council must consider comments from the director of the California Department of Conservation before acting on a proposed cancellation if comments are provided. A cancellation becomes final and a Certificate of Cancellation is issued by the board or council upon the completion of all Conditions of Approval. The entirety of the Project site is included in three separate agricultural preserves. A Williamson Act Cancellation Petition has been prepared and has been filed for approval by the Colusa County Board of Supervisors. The Petition contains the basis for making the findings required for cancellation pursuant to Government Code §51280 et seq.

4.1.2.3 Local

4.1.2.3.1 General Plan

The Colusa County General Plan Agriculture and Land Use Elements include policies related to agricultural land use in the County (Colusa County 2012).

The Project site is designated in the General Plan as "General Agriculture" and "Upland Agriculture," in which cultivated agriculture, industrial and commercial agriculture, agricultural tourism, timber, mining, energy production (including solar), single family housing, and farmworker housing are allowed and appropriate uses (see General Plan Land Use Element Table LU-1). No overlay designations, regional plans, community plans, or specific plans described in the General Plan apply to the Project site, and the entirety of the Project site is included in an agricultural preserve under a Williamson Act contract. The Applicant has prepared a Williamson Act Contract Cancellation Petition that has been filed for consideration by the Board of Supervisors.

Policy AG 1-2: Lands designated for agricultural use shall remain designated for agriculture and not be rezoned or redesignated to an urban use unless all of the following criteria are met:

a. The lot(s) for which conversions is requested is adjacent to agriculture or agricultural support uses (e.g., receiving plants, hulling plants, warehousing, trucking, distribution, and other related activities)

b. Conversion will not be detrimental to existing agricultural operations

c. The conversion land is within 500 feet of existing urban infrastructure (e.g., water supply lines and sewer lines) and conversion will constitute a logical contiguous extension of designated urban area

d. The lot(s) proposed for conversion include a buffer at the agricultural/urban transition zone to protect future users of conservation lands from nuisances associated with typical agricultural practices

e. No feasible alternative location (e.g., non-agricultural lands or less productive agricultural lands) exists.

f. The use would not have a significant adverse effect on existing or potential agricultural activities on surrounding

Policy AG 2-5: Encourage and support the development of new agricultural related industries featuring alternative energy, utilization of agricultural waste, biofuels, and solar or wind farms.

Policy LU 2-11: Develop accommodations for the development of large-scale commercial energy production, such as solar, on agricultural parcels. Such parcels shall require the following:

- A Use Permit.
- An Energy Production (EP) Overlay Zone.
- Detailed and rigorous site planning and development.

Such projects shall only be located on agricultural parcels with marginal or poor farmland. Prime farmlands are not appropriate for this type of development.

4.1.2.3.2 Zoning Ordinance

The Project site is located in Colusa County's F-A and E-A zones (Colusa County 2014). The Colusa County Zoning Code addresses allowable uses in E-A and F-A zoning districts, which allow energy generation for off-site use with a Use Permit or a Minor Use Permit with an EP Overlay Zone. Based on consultation with the County, the Applicant is pursuing a Use Permit for the Project.

4.1.2.3.3 Right to Farm Ordinance

Colusa County's Right to Farm Ordinance is codified in Chapter 34 of the Colusa County Code with the following intent:

> *"The Colusa County board of supervisors intends to: promote the general health, safety and welfare of the county; to preserve and protect for agricultural use those lands zoned for agricultural use; to support and encourage continued agricultural operations in the county and to forewarn prospective purchasers and users of property near or adjacent to agricultural operations of the sounds, odors, dust and chemicals that may accompany agricultural operations. It further intends to limit, by means of communication, nuisance litigation regarding agriculture or affecting agriculture."*

The code provides that sellers of any real property, including sales of County property, must provide the following disclosure:

> *"The property described herein is located in a rural-agricultural county and this property may be subject to inconvenience or discomfort arising from use of agricultural chemicals, including, but not limited to, herbicides, insecticides, acaricides, fungicides, rodenticides, predacides and fertilizers; and from pursuit of agricultural operations including, but not limited to, cultivation, plowing, spraying, pruning, harvesting, crop protection, which occasionally generate dust, smoke, noise and odor, and protecting animal husbandry from depredation, Colusa County sets agriculture as a priority use of the lands including therein, and users of such property should be prepared to accept such inconvenience or discomfort as normal and necessary to farm operations."*

The ordinance also establishes a Good Neighbor Committee designed to mediate disputes regarding agricultural operations and provide a clearinghouse of information regarding agricultural operations in the County (Colusa County 2021).

4.1.3 Thresholds of Significance

A project would result in significant impacts to agriculture and forestry resources if it would:

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

b) *Conflict with existing zoning for agricultural use, or a Williamson Act contract;*

c) *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resource Code*

section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g));

d) Result in loss of forest land or conversion of forest land to non-forest use; or

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

4.1.4 Impact Analysis

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information complied by the California Department of Forestry and Fire Protection regarding state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

To assess potential impacts on agriculture and farmland, the County has considered and relied on the results of Project-specific Agricultural Land Evaluation and Site Assessment (LESA) modeling (Appendix B), site-specific zoning, and mapping available pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. To assess potential impacts on forest resources, the County considered site zoning, site-specific environmental characteristics, and applicable definitions set forth in state law.

IMPACT 4.1-1*: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?* **(No Impact)**

The Project site is designated as Farmland of Local Importance by the California Department of Conservation and is not considered Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, such that there would be no impact.

IMPACT 4.1-2*: Conflict with existing zoning for agricultural use, or a Williamson Act contract?* **(Less Than Significant Impact with Mitigation Incorporated)**

The Project site and gen-tie corridor are zoned F-A and E-A. Colusa County allows commercial scale solar facility projects through the Use Permit process, as described in Zoning Code §44-2.20.30. Compliance with conditions of approval for the Use Permit would ensure the Project would not conflict with the underlying F-A and E-A zones.

The entirety of the Project site is included in a Williamson Act contract. The Applicant, in partnership with the property owners, has filed a Petition for Cancellation of Contract for the Williamson Act contract seeking a finding from the Board of Supervisors that cancellation is either consistent with the purposes of the Act or is in the public interest (see Government Code §51282(a) through (c).

Petitions for cancellation of the contracts were submitted to the County pursuant to Government Code §51282(a)(1), seeking cancellation under the "public interest" cancellation provisions. (Government Code §51282(a)). To determine that the cancellation is in the public interest, the County must find (1) that other public concerns substantially outweigh the objectives of the Williamson Act and (2) that there is no proximate noncontracted land that is both available and suitable for the proposed use or that development of the contracted land would provide more contiguous patterns of urban development (Government Code §51282(c)).

As stated in the Petition for Cancellation and described in more detail in the subsections below, development of the proposed solar facility is in the public interest because the pressing need to address GHG emissions and climate change by generating emissions-free electricity energy from the sun outweigh the objectives of the Williamson Act to keep this particular farmland in agricultural production; the land in question is not prime farmland; and, as discussed in the Project's LESA Model, its conversion would not have significant adverse effect on agricultural resources. The proposed Project would help the State of California achieve its goal of providing electricity 100 percent greenhouse gas (GHG) emissions free by 2045. The proposed Project would generate renewable electrical power using solar photovoltaic (PV) panels and connect to the electrical grid. Implementation of the Project would not attract additional nonagricultural development to adjacent land (i.e., the solar facility would not induce residential or commercial growth in the area). In addition, there is no proximate non-contracted land that is both available and as suitable for the development of solar energy facility.

The Public Interest and Compatibility with Surrounding Agriculture

The Project would not significantly compromise the long-term agricultural capability of the Project site or other contracted lands in agricultural preserves. The Project involves leasing the land, not buying it. It is considered a possibility that solar energy facilities could eventually be removed, and the land returned to farming. Therefore, it is possible that the Project site owners could return the site to full agricultural use when the lease is ended.

Operation of the Project would not affect the uses of adjacent properties under Williamson Act land use contracts. The Project would not result in indirect impacts that could occur with the conversion of the site from agricultural uses to non-agricultural uses. This type of impact is mainly due to compatibility issues with the adjacent agricultural land still in production. These types of compatibility issues may include nuisance effects to a site from noise, dust, odors, and drift of agricultural chemicals. Incompatible uses could impact the adjacent agriculture uses due to restrictions on the use of agricultural chemicals, complaints regarding noise and dust, and vandalism and pilfering of crops. These conflicts could potentially result in increased costs to the agricultural operation and encourage conversion of additional agricultural lands to urban uses. The Project would not result in this type of indirect impact; operation and maintenance activities associated with solar power plants are minimal. The Project site would have a staff of up to approximately 3 personnel to conduct preventative and corrective maintenance, and to maintain the security of the Project site. Operation of the Project would not result in an increase in employment that would require the construction of new housing. The Project would be compatible with the surrounding agricultural uses and is not expected to affect the agricultural use of the adjacent parcels.

The percentage of land proposed for this cancellation represents a tiny percentage of the remaining acreage under Williamson Act contracts in California and does not present a threat to

the short-term or long-term agricultural production in California. The total acreage of contracted Williamson Act land in California is approximately 12.9 million acres (California Department of Conservation 2018). As of 2010, approximately 317,796 acres, or about 55.6 percent of the County's assessed agricultural land, was under some form of Williamson Act contracts with Colusa County (De Novo Planning Group 2010). The Project site represents approximately 0.008 percent of the State acreage, and only around 0.3 percent of the contracted area in Colusa County.

The Public Interest and Use of Non-Prime Farmland

The California Department of Conservation more often found that cancellations are in the public interest when the parcel(s) are not located on lands classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as defined by the Farmland Mapping and Monitoring Program. The Project site does not contain lands classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The Project site and surrounding lands are designated as Farmland of Local Importance.

The Public Interest, Water Availability, and Site Constraints

Water supplied to Colusa County comes from two sources: groundwater and surface water. All domestic water systems in the County are supplied with groundwater, while most irrigation systems are supplied with surface water from the Tehama-Colusa or Glenn-Colusa Canals, the Colusa Drain, or the Sacramento River. The surface water supplies available for use in Colusa County are significant. Surface water is used on 74 to 86 percent of the irrigated land within the Sacramento Valley portion of the County. Whereas groundwater is used on 10 to 22 percent of that land. Of the land where groundwater is used, 6 to 11 percent is not within the service area of any organized entity.

The Project site is located in the Westside Water District which supplies water for agricultural irrigation. The Project site does not contain irrigation infrastructure or an irrigation system connection to the Westside Water District. Due to lack of irrigation water, the current use on the Project site is cattle ranching. The site owners farm winter crops (e.g., wheat, rye, barley, vetch, and oat) on 400 acres (not part of the Project site) to be used to feed cattle. These crops are watered solely by winter rain. During normal rain years, the site owners supply water to troughs for their cattle from three sources: an existing on-site hand dug well; several on-site pit type reservoirs which store winter rain runoff; and several natural on-site springs. During severe drought years, water is purchased from neighbors and trucked in and the cattle herd size is reduced.

Cancellation is more appropriate and consistent with Williamson Act objectives where the land in question has significant site-based constraints to viable agricultural operations. The approximately 1,023.98 acres being petitioned for cancellation under Contract 71-14 are not irrigated and do not have irrigation system connections to the Westside Water District infrastructure serving the Project site area, meaning they lack the necessary infrastructure to deliver surface water to the Project site efficiently. Removing the proposed parcels from Williamson Act contracts and converting them to solar energy use provides a revenue stream to the site owners that can be used, in part, to purchase water during drought years and stem the need to reduce the cattle herd size. This is another factor supporting the County granting this Petition to cancel this Williamson Act contract for solar use of the Project site.

The Public Interest and Local Employment and Economic Benefits

The 2019 unemployment rate in Colusa County was 12.8 percent as compared to an unemployment rate of 4 percent for California (EDD 2020).

The use of the Project site as grazing land supports five fulltime ranch employees. The stable income stream generated from conversion of the Project site to solar would help support agricultural operations on the site owners' holdings at this level and would ensure that the site owners continue to be able to employ local workers. It would also support the economic viability of the remaining land holdings by generating revenue to help subsidize the increasing costs of agriculture, ensuring that the remainder of the ranch can continue as a sustainable agricultural operation.

In addition, the Project would provide renewable energy related diversified job opportunities and training that will help reduce local unemployment and benefit the local economy. It would require a substantial construction workforce during the construction phase which the Applicant expects to be largely supplied by the local Colusa County labor pool and augmented by workers from the surrounding Sacramento Valley area. The total number of construction workers needed on-site is expected to reach a peak of approximately 200 workers; the average number of workers on-site is anticipated to be approximately 50 to 150, depending on the construction activity. Once operational, three permanent jobs would be created for operation and maintenance activities. Decommissioning activities at the end of the useful life of the Project are expected to require a similar workforce as that needed for construction.

Labor expenditures during construction of the proposed Project and concrete, gravel, fencing, rental equipment, fuel, small tools, and other materials will be procured locally. The impact on the local economy will be greater than the direct spending on payroll, goods, and services. Money spent by the Applicant for these purposes will be spent again by the recipient workforce and local businesses, causing a chain reaction of indirect and induced spending that ripples through the local economy. Finally, the Project site would be the point of sale for most of the materials utilized by the Project, and the County would collect sales tax on those items.

The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments. With the removal of the Project site from the Williamson Act contract, the site would no longer received property tax assessments at reduced rates, generating increased tax revenues for the County.

Public Interest and Climate Change and the Deployment of Renewable Energy Generation

Certain gases in the earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. A GHG is any gas in the atmosphere that absorbs infrared radiation. As solar radiation enters the earth's atmosphere, a portion of the radiation is absorbed by the earth's surface, and a portion is reflected back through the atmosphere into space. The absorbed radiation is eventually emitted from the earth into the atmosphere, not as solar radiation, but as infrared radiation. Most solar radiation passes through GHGs; infrared radiation is selectively absorbed or "trapped" by GHGs as heat and then reradiated back toward the earth's surface, warming the lower atmosphere and the earth's surface. This phenomenon, known as the "greenhouse effect," is beneficial for maintaining a

habitable climate on the earth. As the atmospheric concentrations of GHGs rise, however, the average temperature of the lower atmosphere gradually increases, thereby increasing the potential for indirect effects such as a decrease in precipitation as snow, a rise in sea level, and changes to plant and animal species and habitat.

Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one year to several thousand years). GHGs persist in the atmosphere long enough to be dispersed globally. Although the exact lifetime of any particular GHG molecule depends on multiple variables and cannot be pinpointed, scientific evidence reveals that more carbon dioxide (CO_2) is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO_2 emissions, approximately 54 percent is sequestered through ocean uptake, uptake by northern hemisphere forest regrowth, and other terrestrial sinks within a year, whereas the remaining 46 percent of human-caused CO_2 emissions remains stored in the atmosphere.

The efforts devoted to GHG emissions reduction and climate change policy have increased dramatically in recent years. In 2002, California passed AB 1493, which requires California Air Resources Board to develop and implement regulations to reduce automobile and light truck GHG emissions beginning with the 2009 model year. In June 2005, Executive Order S-3-05 was signed to reduce California's GHG emissions to: (1) 2000 levels by 2010; (2) 1990 levels by the 2020; and (3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of AB 32, the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that California Air Resources Board create a plan (Scoping Plan), which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." SB 32, California Global Warming Solutions Act of 2006, codifies the emissions reduction goal of 40 percent below 1990 levels by 2030.

In 2002, SB 1078 established Renewable Portfolio Standard (RPS), which required an annual increase in renewable generation by the utilities with a goal of 20 percent by 2010. SB X1-2 expanded the RPS by establishing a renewable energy target of 20 percent of the total electricity sold to retail customers in California per year by 2013, and 33 percent by 2020 and subsequent years. SB 350, Clean Energy and Pollution Reduction Act further expanded the RPS by establishing a goal of 50 percent of the total electricity sold to retail customers in California per year by 2030.

The Project would keep with renewable energy targets under the Scoping Plan, SB X1-2, and SB 350 by providing a source of renewable energy to achieve the RPS of 33 percent by the end of 2020 and 50 percent by the end of 2030. The Project would assist in the attainment of the state's goals by using a renewable source of energy that could displace electricity generated by fossil-fuel-fired power plants, and therefore would comply with the goals and objectives of the state. Development of the proposed solar Project would address the public's concerns of energy security, global climate change, and the economy. These important public policy concerns outweigh the objectives of the Williamson Act to preserve the continued production of agricultural lands.

Lack of Proximate, Non-Contracted Land which is Both Available and Suitable for the Proposed Use

Information required to support the Williamson Act contract cancellation includes documentation of an applicant's efforts to search for available, suitable, proximate, and noncontracted land for the proposed use, and information explaining why noncontracted sites were not selected.

The Applicant undertook an extensive search to find proximate non-contracted lands that were both available and suitable for the proposed use. The Applicant established criteria for site selection for solar development which reflect economic, environmental, and operational objectives:

- A substation with sufficient capacity must be available to provide a POI in reasonably close proximity to load centers (within 75–100 miles).
- The site must be located as close as possible to the Cortina Substation, although sites up to 4 miles from the Cortina Substation were considered.
- The site must be of sufficient size to support an economically viable utility-scale Project. Combinations of contiguous parcels were considered.
- The land must have an open and relatively flat landscape (less than 15 percent slope across the majority of the site) and cannot contain any permanent structures that cannot be removed e.g., housing, historic buildings, industrial facilities.
- The site has legal access and site control (either purchase or lease) and can be secured.
- The site must not contain highly productive agricultural land or sensitive habitat.

The Applicant began the search for proximate non-contracted land by first identifying a potential substation for Project interconnection. Once the Cortina Substation was confirmed by the California Independent System Operator to have interconnection capacity and favorable interconnection costs, the Applicant then undertook an extensive search to identify any potential proximate sites of adequate size to accommodate the Project. For operational efficiency and economic feasibility, a minimum of approximately 700 contiguous acres was considered operationally efficient and economically feasible for the Project. A search radius of up to 4 miles was set around the Cortina Substation.

Once the search radius was established, all non-contracted parcels within it were examined for suitability in meeting the remaining site selection criteria. This search identified no available suitable sites of 700 acres or more within 4 miles of Cortina Substation. The constraints that eliminated available contiguous sites within the search area included:

- Is under existing Williamson Act contract
- Has a Farmland Mapping and Monitoring Program Prime Farmland designation
- Is subject to slope of more than 15 percent, which is unsuitable for solar
- Contains highly productive agricultural land or giant garter snake habitat

After conducting this thorough search and concluding that proximate non-contracted land was unavailable or unsuitable, the search focused on contracted land for the Project and the Project site was identified and successfully secured with a lease option.

Cancellation of the Existing Williamson Act Contract

The proposed Project would not affect agricultural uses on adjacent or nearby properties under Williamson Act contracts or within agricultural zoning designations for following reasons:

- The Project would not introduce a non-agricultural use that is sensitive to or incompatible with agricultural operations that would occur nearby.
- At the end of its operating life, infrastructure associated with the Project would be removed, which would allow the Project site to return to agricultural use.
- The Project site and surrounding lands do not contain lands classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.
- Cancellation is consistent with Williamson Act objectives because the land in question has significant site-based constraints to viable agricultural operations due to the lack of water accessibility. The Project site does not contain irrigation infrastructure or an irrigation system connection.
- The stable income stream generated from conversion of the Project site to solar would help support agricultural operations on the site owners' other agricultural holdings and would ensure that the site owners continue to be able to employ local workers. It would also support the economic viability of the remaining land holdings by generating revenue to help subsidize the increasing costs of agriculture, ensuring that the remainder of the ranch can continue as a sustainable agricultural operation.

No proximate lands unencumbered by Williamson Act contracts were identified as available and suitable for solar energy development. Therefore, if the County approves a Use Permit and cancels the Williamson Act contract, the Project would not result in any conflict with the agricultural zoning or any Williamson Act contracts. Further, the zoning of the land would remain agricultural. Even though agricultural uses would not occur with the proposed Project, when the solar facility ceases operations, agricultural zoning and the Project's Decommissioning Plan and financial assurances would promote the conversion of the Project site back to agricultural uses.

Implementation of **Mitigation Measure AGR-1** would require the Applicant to file a Petition for Cancellation of Contract for the Williamson Act contract on the Project site.

Approval of the Petition for Cancellation would be required prior to development of the Project; if the Colusa County Board of Supervisors determines that cancellation of the contract is in the public benefit (per Government Code §51282(a)), no conflict with Williamson Act contracted land or farmland conversion would occur, and impacts would be less than significant with approval, impacts would be reduced to less than significant.

IMPACT 4.1-3*: 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 Resource Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?* **(No Impact)**

The Project site is zoned F-A and E-A. Colusa County allows commercial scale solar facility projects through the Use Permit process, as described in Zoning Code §44-2.20.30. Compliance with conditions of approval for the Use Permit would ensure the Project would not conflict with the underlying F-A and E-A zones. The Project site does not contain any land defined as forest land (as defined by Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or land zoned Timberland Production (as defined by Government Code §51104(g)), such that there would be no impact.

IMPACT 4.1-4*: Result in loss of forest land or conversion of forest land to non-forest use?* **(No Impact)**

The Project site is not forest land and has been historically used as grazing land and for dryland crops. No loss of forest land or conversion of forest land to non-forest use would occur, such that there would be no impact.

IMPACT 4.1-5: *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?* **(Less than Significant Impact)**

The LESA Model (Appendix B) rates the potential significance of the conversion of an agricultural parcel, or adjacent land in its Zone of Influence, that has a large proportion of surrounding land in agricultural production more highly than one that has a relatively small percentage of surrounding land in agricultural production. The Zone of Influence is considered to be a 0.25-mile radius around the Project site.

The Surrounding Protected Resource Land Rating is essentially an extension of the Surrounding Agricultural Land Rating and is scored in a similar manner. Protected resource lands are those lands with long term use restrictions that are compatible with or supportive of agricultural uses of land including: publicly owned lands maintained as park, forest, or watershed resources; Williamson Act contracted lands; and lands with natural resource easements that restrict the conversion of such land to urban or industrial uses.

As discussed in the LESA Technical Memorandum included as Appendix B, 100 percent of the land within the Project's Zone of Influence is agricultural and considered protected resource lands; however, due to the Project's other site assessment and land evaluation factors, including soil capabilities and water availability, the LESA analysis concludes that the Project would have a less than significant impact on agricultural land use on the Project site or Zone of Influence.

4.1.5 Mitigation Measures

The following mitigation measure is recommended to reduce significant impacts to agricultural resources.

AGR-1: Williamson Act Cancellation: The Applicant shall file a Petition for Cancellation of Contract for the Williamson Act Contract on the Project site, for consideration by the Colusa County Board of Supervisors, prior to construction.

4.1.6 PG&E Cortina Substation Improvements

To accommodate the Project, Pacific Gas and Electric (PG&E) would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's generation tie (gen-tie) line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements made would be within the existing Cortina Substation footprint. No additional farmland would be converted to make these improvements on PG&E's property, and the Williamson Act would not apply. Furthermore, no forest land or timber land would be impacted by these improvements as there are none present within the boundaries of the area that would be impacted. Accordingly, the PG&E Cortina Substation improvements would have no impact on significance criteria 4.1-1 through 4.1-5. No mitigation measures would be required.

4.1.7 Cumulative Impacts

The Project would result in no impact with respect to conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use, conflict with existing zoning for forest land or timberland. Therefore, the Project could not cause or contribute to any potential significant cumulative impact to these resource areas.

The geographic context for potential cumulative impacts related to other changes in the existing environment which, due to their location or nature, could result in agricultural impacts is Colusa County.

Ongoing impacts of past projects to Agriculture Resources are reflected in the existing conditions described in Section 4.1.1 and include the conversion of agricultural uses to other uses. The list of cumulative projects is included in Table 2-1. There are no other projects that are under County consideration that, if approved and constructed, would have the potential to conflict with a Williamson Act contract or convert farmland to a non-agricultural use. With implementation of **Mitigation Measure AGR-1**, Project impacts to the conflict with the existing Williamson Act contract on the Project site are less than significant, site-specific, and not expected to result in the conversion of other Williamson Act contracts. Additionally, the Project would not contribute to a cumulatively considerable impact, as there are no reasonably foreseeable conflicts on other properties, based on the list of known cumulative projects.

The Project would have a less than significant indirect impact related to potential conversion of adjacent, off-site farmland to non-agricultural use. Because this incremental impact could contribute to a potential significant cumulative impact, the County has considered whether the contribution would be cumulative considerable. The LESA found no significant impact on agricultural land use within the Project's Zone of Influence, and there are no reasonably foreseeable cumulative projects that would convert farmland to non-agricultural uses within the County. For these reasons, the Project's less than significant indirect impact would not be cumulatively considerable.

4.1.8 References

California Department of Conservation. 2018. *The Williamson Act Status Report 2016-2017.* Available at: https://www.conservation.ca.gov/dlrp/wa/Pages/stats_reports.aspx Accessed September 3, 2020.

California Employment Development Department (EDD). 2020. *Local Area Unemployment Statistics (LAUS), Annual Average.* Updated June 3, 2020. Available at: https://data.edd.ca.gov/Labor-Force-and-Unemployment-Rates/Local-Area-Unemployment-Statistics-LAUS-Annual-Ave/7jbb-3rb8 Accessed September 3, 2020.

Colusa County. 2012. General Plan. Adopted July 31, 2012.

Colusa County. 2014. Zoning Ordinance. Adopted August 26, 2014.

Colusa County. 2021. County Code. Sections 34-1 to 34-3. Current through January 5, 2021.

De Novo Planning Group. 2010. Colusa County General Plan Update Background Report. June 2010. Available at: http://www.countyofcolusageneralplan.org/content/background-report/index.html Accessed September 2, 2020.

4.2 AIR QUALITY

This section identifies and evaluates issues related to Air Quality in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County did not receive any scoping comments related to Air Quality.

4.2.1 Existing Conditions

Climate and Topography

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. Colusa County is located in the Sacramento Valley Air Basin (SVAB), which includes Sutter, Yuba, Colusa, Butte, Glenn, Tehama, Shasta, Placer, Solano, Yolo, and Sacramento counties. The northern portion of the SVAB (NSVAB) includes Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba counties and is bounded on the north and west by the Coastal Mountain Range and on the east by the southern end of the Cascade Mountain Range and the northern end of the Sierra Nevada. These mountain ranges reach heights of 6,000 feet above mean sea level, with individual peaks rising much higher. The mountains form a substantial physical barrier to locally created pollution as well as to pollution transported northward on prevailing winds from the Sacramento metropolitan area (SVAQEEP 2015). Colusa County's topography and meteorology have the potential to cause potentially adverse air quality conditions.

Colusa's climate is classified as warm and temperate. The rain in Colusa falls mostly in the winter, with relatively little rain in the summer. The Köppen-Geiger climate classification is Csa (C=warm, temperate, s=steppe, a=hot summer). Prevailing winds in the area are generally from the south and southwest. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas. Colusa County has on average 17.84 inches of precipitation annually with the most rainfall occurring during the winter months (NOAA NCDC 2021).

Pollutants and Effects

The Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants. EPA calls these "criteria" air pollutants because it regulates them by developing health-based (primary) or environmentally based (secondary) standards. These pollutants are summarized below.

Ozone (O_3) is a secondary pollutant that is formed from the reaction of nitrogen oxides and volatile organic compounds in the presence of sunlight. Ozone exists naturally in the stratosphere, shielding Earth from harmful ultraviolet radiation. However, at ground-level, ozone causes adverse health effects and is a major component of smog. High concentrations have been tied to respiratory ailments and cardiovascular disease, as well as damage to natural ecosystems, agricultural crops, and materials such as rubber, paint, and plastics. In the Northern Sacramento Planning Area (NSVPA), ozone can be caused by stationary source emissions, such as from internal combustion engines or boilers, mobile sources such as cars, trucks, and trains, or area sources such as consumer products or wildfires. The NSVPA districts also experience transport ozone from the Broader Sacramento Area.

Reactive organic gases (ROG) are composed of hydrocarbon compounds that contribute to the formation of smog through atmospheric chemical reactions. ROG are emitted from fuel combustion and industrial and agricultural processes. Compounds that make up ROG are often evaluated as part of a toxic risk assessment under AB 2588 provisions.

Nitrogen Oxides (NOx) are a family of gaseous nitrogen compounds that result primarily from the combustion of fossil fuels. It is a precursor to the formation of ozone and particulate matter, and nitrogen dioxide (NO_2) is regulated directly under the NAAQS and CAAQS.

Particulate Matter (PM) is comprised of solid particles and liquid droplets, made up of acids, organic chemicals, metals, and soil or dust particles. Particles that are 10 micrometers in diameter or smaller are a potential human health concern because they can enter the lungs, which can affect the heart and cause adverse health effects. They can be emitted directly to the atmosphere as well as formed in the atmosphere by chemical reactions among precursors. Particulate matter can be categorized based on their size:

- Inhalable coarse particles ($PM_{2.5}$-PM_{10}) are between 2.5 and 10 micrometers in diameter. Sources include roads, farming activities, windblown dust as well as combustion sources.
- Fine particles ($PM_{2.5}$) are 2.5 micrometers in diameter or smaller, generally emitted by combustion sources like vehicles, power generation, industrial processes and wood burning.

Carbon Monoxide (CO) is an odorless, colorless gas formed by the incomplete combustion of fuels emitted directly into the air. The main source of CO in the Sacramento Valley is on-road motor vehicles. Therefore, CO problems tend to be localized with nonattainment areas designated in urban areas rather than the entire basin. With the introduction of new automotive emission controls and fleet turnover, emissions from motor vehicles have been declining.

Sulfur Dioxide (SO_2) is a colorless gas formed by the combustion of fossil fuels that contain sulfur. The Valley is in attainment of both the federal and California standards for SO_2. The use of low-sulfur fuel has minimized problems with this pollutant.

Sensitive Receptors

Sensitive receptors are segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems related to respiratory distress). Land uses often identified as sensitive receptors include schools, parks, playgrounds, daycare centers, nursing homes, hospitals, and residential communities.

Land use in the area is mostly agricultural interspersed with sparse rural residential. The nearest residence is 100 feet south of the Project. A second residence is located about 430 feet from the gen-tie line on Walnut Road.

The residence near the north side of the Project area is owned by the landowner leasing the parcels for the solar farm. Some agricultural buildings are also located to the west of the Project. The remaining residences and other sensitive receptors are located more than 1,000 feet from the site. The city of Williams is located approximately 6 miles from the site and a daycare is located 5.8 miles from the site. To the east, the nearest residence is just under two miles from the nearest site boundary.

The greatest potential for exposure to air pollutants would occur during construction, when the ground would be disturbed from grading and delivery of materials. The construction emissions presented in this analysis are based on worst-case conditions, assuming maximum construction activity would occur. In reality, exposure to emissions would vary substantially throughout construction, and would depend on the staging of the work being conducted, location of work relative to receptors, and weather conditions. The exposure is below significance thresholds and will be temporary.

An aerial map showing the 1,000-foot buffer and nearby sensitive receptors is provided in Figure 4.2-1.

4.2.2 Regulatory Setting

Ambient air quality standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and safety. They are designed to protect those people most susceptible to respiratory distress (i.e., sensitive receptors), such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. Recent research suggests, however, that long-term exposure to air pollution at levels that meet air quality standards may nevertheless have adverse health effects. For example, ozone exposure even at levels close to the ambient air quality standard may lead to adverse respiratory health.

The following discussion describes the regulatory authority of the federal, state, and local jurisdictions. The federal CAA, the California Clean Air Act (CCAA), and the Air Quality Management Plan, prepared and adopted by the Colusa County Air Pollution Control District (CCAPCD), regulate air quality in the SVAB. Federal and state standards are shown in Table 4.2-1, State and Federal Air Quality Standards.

Federal Regulations

Criteria Air Pollutants

The federal CAA (42 United States Code [U.S.C.] Section 7401-7671q) is a comprehensive federal law that regulates air emissions from area, stationary, and mobile sources and requires the adoption of the NAAQS to protect public health and welfare from the effects of air pollution. The federal CAA Amendments of 1990 required that the EPA review all NAAQS with respect to health impacts and propose modifications or new rules as appropriate. In addition, the amendments of the 1990 federal CAA are associated with the attainment and maintenance of air quality standards, permits and enforcement, toxic air pollutants, acid deposition, stratospheric ozone protection, and motor vehicles and fuels.

Current NAAQS are assigned to SO_2, CO, NO_2, O_3, PM_{10}, $PM_{2.5}$, and Lead. These pollutants are designated criteria pollutants.

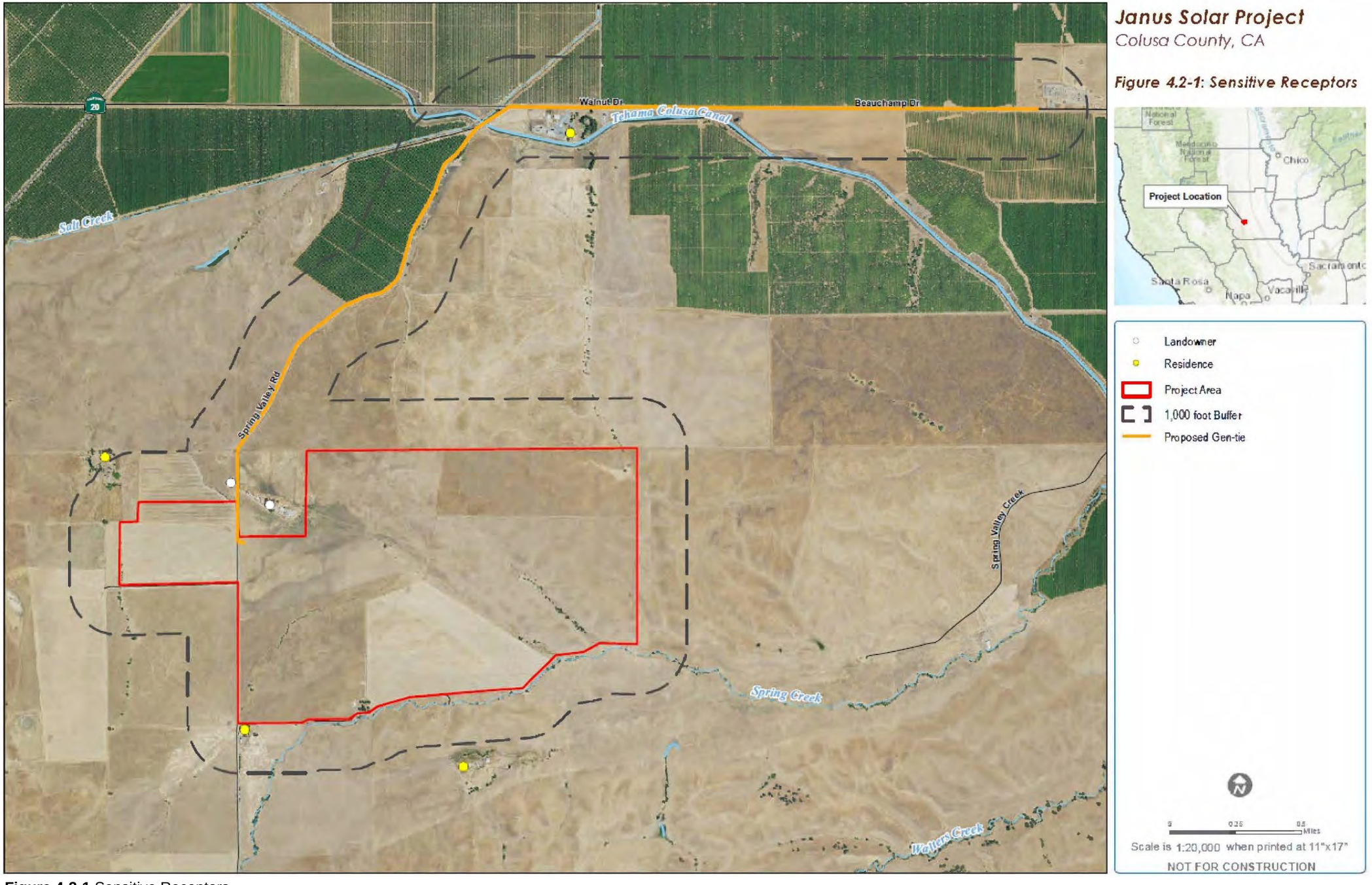


Figure 4-2-1 Sensitive Receptors

Hazardous Air Pollutants

The 1977 federal CAA amendments required the EPA to identify National Emission Standards for hazardous air pollutants (HAPs) to protect public health and welfare. HAPs include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. The 1990 federal CAA Amendments, which expanded the control program for HAPs, identified 189 substances and chemical families as HAPs. Over the years, the list has been modified. Currently, there are 187 federally regulated HAPs.

State Regulations

Criteria Air Pollutants

The CCAA, passed by the California Legislature and signed into law by the Governor in 1988, assigns state-specific ambient air quality standards. The California standards are, in most cases, more stringent than federal standards. The goal of the CCAA is to attain state air quality standards by the earliest practical date. Because California established Ambient Air Quality Standards several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology in much of California, there can be a considerable difference between state and national clean air standards. Those standards currently in effect in California are shown on Table 4.2-1, State and Federal Ambient Air Quality Standards.

The CCAA requires each air pollution control district of an air basin designated as nonattainment of state ambient air quality standards to prepare and submit a plan for attaining and maintaining state standards. After further review of the relationship between fine particulate matter and human health effects, the CARB adopted new state standards on June 20, 2002 for $PM_{2.5}$ that are more stringent than the federal standards. No specific control programs are in place to achieve this much more stringent standard. However, it does represent an air quality goal to dramatically reduce the adverse health effects from small-particle air pollution.

Toxic Air Contaminants

The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California Toxic Air Contaminants (TAC) list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, facilities are required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. The regulation is anticipated to result in an 80-percent decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. In 2020, CARB adopted the Advanced Clean Truck Regulations that requires truck manufacturers to transition from diesel trucks and vans to electric zero-emission trucks beginning in 2024. By 2045, every new truck sold in California will be zero-emission.

Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, On-Road Heavy Duty (New) Vehicle Program, In-Use Off-Road Diesel Vehicle Regulation, and New Off-Road Compression-Ignition (Diesel) Engines and Equipment program. These regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. Several Airborne Toxic Control Measures reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 California Code of Regulations [CCR] 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

California Health and Safety Code Section 41700

Section 41700 of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Table 4.2-1. State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3, 5]	Secondary [3, 6]	Method[7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[8]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[9]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)[9]	—	
	Annual Arithmetic Mean	—		0.30 ppm (for certain areas)[9]	—	

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3, 5]	Secondary[3, 6]	Method[7]
Lead (Pb)[10, 11]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[9]	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Visibility Reducing Particles[12]	8 Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates (SO_4)	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	24 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: California Air Resources Board (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf, updated 05/04/16), and U.S. Environmental Protection Agency (http://www.epa.gov/air/criteria.html, accessed April 2021)

1 *California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter (PM_{10}, and $PM_{2.5}$) and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.*

2 *National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the EPA for further clarification and current national policies.*

3 *Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. The torr (symbol: Torr) is a non-SI unit of pressure with the ratio of 760 to 1 standard atmosphere, chosen to be roughly equal to the fluid pressure exerted by a millimeter of mercury, i.e., a pressure of 1 Torr is approximately equal to one millimeter of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.*

4 *Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.*

5 *National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect public health.*

6 *National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.*

7 *Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.*

8 *To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.*

9 *On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.*

10 *CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects that are determined. These actions allow implementing control measures at levels below the ambient concentrations specified for these pollutants.*

11 *The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.*

12 *In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.*

Local Regulations

Colusa County Air Pollution Control District

The CCAPCD manages air quality within the Colusa County portion of the SVAB for attainment and permitting purposes. In Colusa County, the CCAPCD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs. The CCAPCD develops regulations to improve air quality and protect the health and welfare of Colusa County residents and their environment. The district also monitors air quality, prepares clean air plans, responds to citizen complaints concerning air quality, and regulates agricultural burning.

CCAPCD regulations include permit requirements, emissions limits for specific source categories, requirements for open burning, and air toxics control measures for several source categories including stationary compression ignition engines. An emergency generator is the only stationary source proposed for the Project and will be registered as a portable unit. CCAPCD regulates nuisance conditions in Rule 200, which states that “no person shall discharge from any non-vehicular source such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property”. No other CCAPCD rules are applicable to the Project.

Colusa County Plan

Colusa County adopted a comprehensive update to their General Plan on July 31, 2012 (Colusa County 2012). The General Plan details the County’s guiding principles for a variety of planning topics and is the roadmap for future development in the county. The Conservation Element addresses the conservation, development and utilization of natural resources, which includes forests, soils, rivers and other waters, wildlife, and minerals. Energy conservation, air quality, and the preservation of cultural and historical resources are also addressed in the conservation element.

The Colusa County General Plan contains several goals, policies, and actions relative to air quality. Following is a summary of goals policies and actions potentially applicable to the Project.

- Policy CON 2-2: Encourage the development of large-scale commercial energy projects that utilize renewable sources such as solar, wind, biomass, and agricultural byproducts.
- Policy CON 2-3: Allow commercial alternative energy facilities, including solar, wind, and biomass in the Agriculture General, Agriculture Upland, Industrial, Forest, and Resource Conservation land use designations with a Conditional Use Permit.
- Policy CON 2-15: Improve air quality through continuing to require a compact development pattern that focuses growth in and around existing communities, locating new housing near places of employment, encouraging alternative modes of transportation, and requiring projects to mitigate significant air quality impacts to the extent feasible.

4.2.3 Regional and Local Air Quality Conditions

Colusa County Attainment Status

In an effort to protect human health and welfare, the CARB and EPA have established Ambient Air Quality Standards. Areas are considered in "attainment" if standards are met and "nonattainment" if they are not met. For ozone, nonattainment status is further classified as marginal, moderate, serious, severe or extreme.

Table 4.2-2 Colusa County Attainment Status

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone (1-Hour)	No federal standard	Attainment
Ozone (8-Hour)	Attainment/Unclassified	Attainment
NO_2	Attainment/Unclassified	Attainment
CO	Attainment/Unclassified	Attainment/Unclassified
PM_{10}	Attainment/Unclassified	Nonattainment
$PM_{2.5}$	Attainment/Unclassified	Attainment
SO_2	Attainment/Unclassified	Attainment
Lead	Attainment/Unclassified	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified

Source: CARB 2021a

Local Ambient Air Quality

Table 4.2-3 Local Ambient Air Quality Monitoring Data for the Years 2017-2019

Averaging Period	2017	2018	2019
Ozone (O_3) – *Sunrise Blvd, Colusa, California Monitoring Station (AQS Site ID: 06-011-1002)*			
1-hour Maximum Concentration (ppm)	0.075	0.073	0.062
Number of days exceeding CAAQS = **0.09 ppm**	0	4	0
8-hour Maximum Concentration	0.068	0.062	0.055
Number of days exceeding CAAQS = **0.070 ppm**	0	0	0
Number of days exceeding NAAQS = **0.070 ppm**	0	0	0
Nitrogen Dioxide (NO_2) – *Yuba City, California Monitoring Station (AQS Site ID: 06-101-0003)*			
1-hour Maximum Concentration (ppb)	49	51	45
Number of days exceeding CAAQS = **180 ppb**	0	0	0
Number of days exceeding NAAQS = **100 ppb**	0	0	0
Annual Average Concentration (ppm) (**53 ppb**)	7	7	6
Carbon Monoxide (CO) – *Chico, California Monitoring Station (AQS Site ID: 06-007-0008)*			
1-hour Maximum Concentration (ppm)	1.9	20.7	1.6
Number of days exceeding CAAQS = **20 ppm**	--	--	--
Number of days exceeding NAAQS = **35 ppm**	0	0	0
8-hour Maximum Concentration	1.4	12.8	1.3
Number of days exceeding CAAQS = **9.0 ppm**	--	--	--
Number of days exceeding NAAQS = **9.0 ppm**	0	0	0

Averaging Period	2017	2018	2019
Coarse Particulate Matter (PM_{10}) – *Sunrise Blvd, Colusa, California Monitoring Station (AQS Site ID: 06-011-1002)*			
24-hour Maximum Concentration (µg/m^3)	148	275	120
Number of days exceeding CAAQS = **50 µg/m^3**	33	66	45
Number of days exceeding NAAQS = **150 µg/m^3**	0	2	0
Annual Average Concentration (state method) (µg/m^3) (**20 µg/m^3**)	26	32	28
Fine Particulate Matter ($PM_{2.5}$) – *Sunrise Blvd, Colusa, California Monitoring Station (AQS Site ID: 06-011-1002)*			
24-hour Maximum Concentration (µg/m^3)	45	113	27
Number of days exceeding NAAQS = **35 µg/m^3**	8	-	0
Annual Average Concentration (µg/m^3) (**12 µg/m^3**)	8	-	7
Sulfur Dioxide (SO_2) – *Sacramento Del Paso Manor, California Monitoring Station (AQS Site ID: 06-067-0006)*			
1-hour Maximum Concentration (ppm)	0.0073	0.0036	0.004
Number of days exceeding NAAQS = **0.075 ppm**	0	0	0
24-hour Maximum Concentration (ppm)	0.0059	0.0011	0.0011
Number of days exceeding NAAQS = **0.14 ppm**	0	0	0
Annual Average Concentration (ppm) (**0.03 ppm**)	0.00185[1]	0.00037	0.00038

[1] Does not satisfy minimum completeness
µg/m^3 – microgram per cubic meter; CAAQS – California ambient air quality standards; NAAQS – National Ambient Air Quality Standards; ppb – parts per billion; ppm – parts per million
Sources: CARB 2021b; EPA 2021

4.2.4 Methodology

Air pollutant emissions associated with the Project would occur over the short term (i.e., 11 months) from construction related activities including equipment exhaust, vehicle travel on paved and unpaved roads, and fugitive dust from soil disturbance activities. Construction activities would produce combustion emissions from construction equipment engines and motor vehicles transporting the construction crew, equipment, and materials. Exhaust emissions from construction activities would vary daily as activity levels change. Emissions quantification related to construction activities is necessary for comparison to the Butte County Air Quality Management District (BCAQMD) significance thresholds. In addition, the emissions documentation must include the quantification methodology used, including emission factors, emission factors sources, assumptions, and sample calculations where necessary. Because the emission calculation tool CalEEMod was used, the emissions calculation assumption section presents the general assumptions for the specific inputs and settings used for the air quality analysis.

Once constructed, the Project would operate seven days per week and 365 days per year. Only occasional, on-site maintenance is expected to be required following commissioning. Operations and maintenance activities would require up to three workers performing visual inspections, monitoring plant performance, executing minor repairs, and responding to needs for plant adjustment. On intermittent occasions, the additional workers may be required for repairs or replacement of equipment, panel cleaning, and other specialized maintenance. However, due to the self-operating nature of the facilities, such actions would likely occur infrequently. The expected maintenance would generate little traffic during operations. Operations and maintenance vehicles would include light duty trucks (e.g., pickup, flatbed) and other light equipment for maintenance and module washing. Heavy equipment would not be utilized during normal operation other than water trucks delivering water to the facility.

Minimal water would be required for panel washing activities and general maintenance. The need for panel washing would be infrequent (e.g., months to years between washings) and determined based on operating considerations, including actual soiling of the solar panels and any expected benefit from cleaning.

Construction

The Project Owner's construction schedule and anticipated construction equipment and vehicles were used to determine emissions. The construction will occur in the five main phases listed in Table 4.2-4.

Table 4.2-4. Construction Schedule

Phase	Duration (days)
Preparation	9
Excavation	23
Utilities/Sub-grade	23
Construction	233
Paving	17

The main construction processes are anticipated to occur during a period of approximately 10 months and would begin in late 2022. Project construction would consist of five major stages. The first stage would include mobilization, site preparation, fencing, and laydown. The second stage would involve excavation, trenching and trench backfill. Because the facility has been designed to use flat areas of the site, grading would be minimal. The third stage includes installation of cables and utilities. The fourth stage includes construction of the inverters, PV modules, and BESS units, and also includes commissioning and testing. The final stage includes road paving.

Water for dust control and other construction needs would likely be trucked to the site, and this assessment conservatively assumes all water will be trucked to the site

Table 4.2-5. Construction Scenario Assumptions

Construction Phase	Equipment			Average / Peak Daily Worker Vehicle Round Trips	Average / Peak Daily Vendor / Haul Truck Round Trips
	Equipment Type	Quantity	Usage Hours		
Preparation	Tractors/Loaders/Backhoes	4	8	50 / 50	10 / 20
	Plate Compactors	2	8		
	Crawler Tractors	2	8		
	Dumpers/Tenders	5	8		
	Forklifts	2	8		
	Generator Sets	4	8		
	Graders	2	8		
	Scrapers	2	8		
	Skid Steer Loaders	4	8		
	Water Trucks	8	8		

Construction Phase	Equipment			Average / Peak Daily Worker Vehicle Round Trips	Average / Peak Daily Vendor / Haul Truck Round Trips
	Equipment Type	Quantity	Usage Hours		
Excavation	Tractors/Loaders/Backhoes	4	8	50 / 50	10 / 20
	Plate Compactors	2	8		
	Crawler Tractors	2	8		
	Dumpers/Tenders	5	8		
	Forklifts	2	8		
	Generator Sets	4	8		
	Graders	2	8		
	Scrapers	2	8		
	Skid Steer Loaders	2	8		
	Water Trucks	8	8		
Utilities/Sub-grade	Tractors/Loaders/Backhoes	4	8	100 / 100	10 / 20
	Plate Compactors	2	8		
	Crawler Tractors	2	8		
	Dumpers/Tenders	5	8		
	Forklifts	2	8		
	Generator Sets	4	8		
	Graders	2	8		
	Scrapers	2	8		
	Skid Steer Loaders	2	8		
	Water Trucks	8	8		
Construction	Tractors/Loaders/Backhoes	7	8	150 / 200	10 / 30
	Bore/Drill Rigs	10	8		
	Cement and Mortar Mixers	10	8		
	Forklifts	5	8		
	Concrete/Industrial Saws	3	8		
	Plate Compactors	1	8		
	Cranes	1	8		
	Dumpers/Tenders	5	8		
	Excavators	2	8		
	Generator Sets	4	8		
	Pavers	1	8		
	Paving Equipment	1	8		
	Skid Steer Loaders	2	8		
	Trenchers	10	8		
	Rollers	1	8		
	Water Trucks	2	8		
Paving	Rollers	1	8	20 / 20	2 / 5

Operation

Emissions from facility operations results from three workers per day commuting to and from the site, conducting visual inspections, monitoring plant performance, executing minor repairs, and responding to needs for plant adjustment.

Emission Calculation Assumptions

On-Road Equipment Assumptions:

- Trip lengths reflect that trips would be between the Janus Solar facilities and major commercial centers and ports.
- Exhaust emissions for on-road equipment were calculated using CalEEMod for years 2022 and 2023.
- All on-road construction equipment emissions were determined using on-road emission factors; none were estimated using off-road emission factors.
- Fugitive dust emissions were estimated for both paved roads and unpaved roads, where applicable.

A summary of on-road equipment and the number of trips is provided in Table 4.2-5.

Off-Road Equipment Assumptions

- Exhaust emissions were calculated using the CalEEMod for years 2022 and 2023.
- Fugitive dust emissions were estimated for grading activities and truck loading using CalEEMod.

A list of the types and quantity of construction equipment is provided in Table 4.2-5.

Construction Information and Assumptions

Construction-related emissions are based on the following:

- The site total acreage inside the proposed fence-line is approximately 1,024 acres. Approximately 13 acres will require excavation and grading.
- Mobilization of the construction equipment may occur in the open spaces of the shared facilities area. Equipment and vehicle travels may also occur within the 1,024-acre Project site and the shared facilities area during the construction period.
- Construction activity is expected to last for approximately of 10 months.

Combustion

Combustion emissions during construction will result from:

- Exhaust from the on-site diesel construction equipment;
- Exhaust from on-site water trucks used to control construction dust emissions;
- Exhaust from pickup trucks and diesel trucks used to transport workers and materials around the Project site;
- Exhaust from diesel trucks used to deliver equipment and materials; and
- Exhaust from automobiles used by workers to commute to and from the Project site.

Fugitive Dust

Fugitive dust emissions during construction will result from:

- Dust entrained during mobilization and construction at the construction site; and
- Dust entrained during off-site travel on paved and unpaved surfaces.

4.2.5 Thresholds of Significance

A Project would have a significant impact to air quality if it would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Result in a cumulatively considerable net increase of any criteria pollutants 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; or

d) Create objectionable odors affecting a substantial number of people.

4.2.5.1 Colusa County Air Pollution Control District

CCAPCD has not developed air quality thresholds of significance. Action CON-2F states the County should coordinate with CCAPCD to develop thresholds associated with construction activities and to develop best management practices (BMPs) to be implemented during construction. CCAPCD has not yet developed these, but has recommended using significance thresholds adopted by the BCAQMD due to their proximity in the SVAB. The BCAQMD Guidelines for Addressing Air Quality and Greenhouse Gas Impacts for Projects Subject to CEQA (BCAQMD Guidelines) were issued in 2014 (BCAQMD 2014). The BCAQMD Guidelines have air quality thresholds of significance for criteria pollutants and TACs.

Table 4.2-6. BCAQMD Air Quality Thresholds of Significance – Criteria Pollutants

Phase	NO_X	ROG	PM_{10}
Construction	137 lb/day	137 lb/day	80 lb/day
Operational	25 lb/day	25 lb/day	80 lb/day
	4.5 tpy	4.5 tpy	None

lb/day – pounds per day; tpy – tons per year

The BCAQMD Guidelines outlines screening criteria for different types and sizes of projects. For projects that do not meet the screening criteria and require further evaluation, BCAQMD requires that criteria air pollutants and greenhouse gas (GHG) emissions that may occur during the construction and operational phases be quantified through the latest version of CalEEMod or another acceptable modeling approach. The proposed Project is not one of the project “types” listed in the screening guidance. Therefore, to evaluate impacts of the Project under the California Environmental Quality Acty (CEQA), CalEEMod was used to quantify emissions for comparison to air quality thresholds of significance.

For non-stationary source greenhouse gas emissions, the BCAQMD Guidelines recommends compliance with Qualified Greenhouse Gas Reduction Strategy, Lead Agency's threshold, or consistency with goals of AB 32.

Recommended significance thresholds for TACs include mitigating below the following levels within a zone of influence of 1,000-foot radius from the source:

- Increased cancer risk of greater than 10 in one million;
- Chronic or acute Increased non-cancer risk of greater than 1.0 Hazard Index (Chronic or Acute)
- Ambient Diesel $PM_{2.5}$ increase greater than 0.3 µg/m^3 annual average

There is a potential for odor from construction equipment during construction. Any odorous impacts from construction will be temporary in nature and will be minimized by the use of Tier 4 equipment.

4.2.6 Impacts Analysis

IMPACT 4.2-1: *Would the project conflict with or obstruct implementation of the applicable air quality plan?*

Less Than Significant Impact. The Project would not conflict with existing land uses or result in population growth. There are no CCAPCD rules applicable to the Project. In addition, the Project would not result in a long-term increase in the number of trips or increase the overall vehicle miles traveled in the area. Vendor truck and worker vehicle trips would be generated during the proposed construction activities but would be limited after construction is completed.

During construction, unmitigated NO_x emissions would exceed the BCAQMD daily and annual significance thresholds. However, mitigated NO_X emissions would fall below the BCAQMD significance thresholds. Both unmitigated and mitigated ROG emissions are below the annual threshold of significance. Both unmitigated and mitigated PM_{10} emissions are below the daily threshold of significance.

Unmitigated and mitigated daily operational emissions are below significance thresholds for all pollutants. During the longer-term operational phase, the Project would have routine inspection and maintenance activities that would result in a net increase in emissions, although the increase in emissions would not exceed any significant threshold. Construction and operational emissions are summarized in Tables 4.2-7, 4.2-8, and 4.2-9.

As previously discussed, the renewable energy project meets Policies CON 2-2 and 2-3 of the Colusa County General Plan.

IMPACT 4.2-2: *Would the project result in a cumulatively considerable net increase of any criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*

Construction Emissions

Less Than Significant Impact. Construction emissions are summarized in Tables 4.2-7 and 4.2-8. The Project area is non-attainment for the California AAQS for PM_{10}. The CCAPCD has requested that the Project use BCAQMD annual and daily significance thresholds to address pollution sources associated with general construction activities, such as the operation of on-site

construction equipment, fugitive dust from site grading activities, and travel by construction workers. **Mitigation Measure AQ-1** would be required onsite to reduce dust emissions. Based on these recommended thresholds, the proposed Project would result in a significant contribution to localized ambient air quality if daily emissions exceeded 80 pounds per day of PM_{10} during either construction or operation. Daily PM_{10} emissions will be well below this threshold for both construction and operation. BCAQMD also specifies daily and annual significance thresholds for NO_X and ROG emissions from construction. Emissions for both are below significance thresholds. Detailed emissions calculations are provided in Appendix C.

Table 4.2-7. Estimated Maximum Annual Construction Criteria Air Pollutant Emissions

Maximum Rolling 12-month	Emissions (tons per year)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Unmitigated	2.31	18.56	21.49	0.06	3.01	0.57
Mitigated	0.94	4.45	25.68	0.06	2.23	0.57
BCAQMD Threshold	*4.5*	*4.5*	--	--	--	--
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Table 4.2-8. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Maximum Rolling 12-month	Emissions (pounds per day)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Unmitigated	18.64	170.05	178.55	0.59	27.37	11.95
Mitigated	8.29	62.59	207.69	0.59	21.41	6.40
BCAQMD Threshold	*137*	*137*	--	--	*80*	--
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Operational Emissions

Less Than Significant Impact. Project operational emissions were estimated using CalEEMod to include potential area, energy, mobile, off-road, and stationary source emissions. This included solvent emissions from paints and primers, water trucks, potential emergency generator emissions, and vehicle emissions from maintenance vehicles. Table 4.2-9 presents the maximum daily operational emissions in pounds per day with a comparison to BCAQMD thresholds. Operational emissions would be well below the BCAQMD thresholds of significance for all pollutants. Detailed emissions calculations are provided in Appendix C.

Table 4.2-9. Estimated Maximum Daily Operational Criteria Air Pollutant Emissions

Emission Source	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
	(pounds per day)					
Area, Energy, Mobile, Off-road, Stationary	14.26	13.09	20.07	0.04	2.36	1.00
BCAQMD Threshold	*25*	*25*	--	--	*80*	--
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Emissions data for Colusa County provided by CARB (CEPAM 2019SIP v1.02) were used for comparison with potential Project emissions. A summary of annual and daily emissions in Colusa

County are provided Tables 4.2-10 and 4.2-11. A comparison of the Project annual PM_{10} emissions to the lowest annual PM_{10} emissions over the past 10 years shows potential construction PM_{10} to be 0.048 percent of total county annual emissions and operational emissions to be 0.00086 percent of the total county annual emissions.

A comparison of county-wide daily emissions (tons per day) with Project construction and operational emissions using the lowest daily Colusa County PM_{10} emissions over the past 10 years shows construction emissions would be 0.086 percent of the county daily emissions and operational emissions would be 0.0079 percent of the county total daily emissions.

The Project area is non-attainment for the California AAQS for PM_{10}. CCAPCD requires the use of the BCAQMD's daily and annual significance thresholds for to address pollution sources associated with general construction activities, such as the operation of on-site construction equipment, fugitive dust from site grading activities, and travel by construction workers. Although the Project site is located in a region that is non-attainment for PM_{10}, the cumulative emissions associated with the Project would not be considerable as the emissions would fall below BCAQMD thresholds. Under this condition, the Project would not make a cumulatively considerable contribution during construction or operations. Therefore, impacts would be less than significant. Additionally, the Project would not conflict with the CCAPCD PM_{10} attainment plans, which address cumulative emissions in Colusa County and account for emissions associated with construction activity.

The comparison of the Project emissions to the area source county emissions shows that the projected PM_{10} emissions from construction and operation of the Project will be a small fraction of the county emissions. Therefore, the Project would not interfere with attainment progress for the CAAQS for PM_{10} in the county.

Table 4.2-10. Colusa County Historical Region-Wide Annual Pollutant Emissions

Year / Source Type[1]		Emissions (tons/year)					
		NO_x	CO	ROG	SO_x	PM_{10}	$PM_{2.5}$
2010	Point	555.6	182.7	74.6	12.8	406.8	116.3
	All other	4,247.1	8,896.3	21,136.3	55.1	4,622.6	1,157.4
2011	Point	457.7	267.8	81.4	121.0	363.3	123.5
	All other	4,029.3	8,436.4	20,495.4	51.6	4,556.3	1,126.7
2012	Point	424.1	245.0	76.0	101.2	389.9	133.5
	All other	5,194.8	129,909.8	28,968.2	879.1	16,443.5	11,164.4
2013	Point	448.2	192.0	89.9	116.2	378.7	127.8
	All other	3,668.5	6,625.1	20,353.6	33.6	4,422.5	983.2
2014	Point	397.5	223.4	80.8	101.6	312.6	96.6
	All other	3,539.0	6,438.5	20,288.7	33.9	4,424.5	979.0
2015	Point	345.2	189.6	91.6	23.3	280.0	110.2
	All other	3,611.1	16,218.4	20,944.5	142.6	5,508.7	1,883.1
2016	Point	348.5	341.1	115.9	28.6	366.1	167.4
	All other	3,167.7	5,741.5	20,143.4	32.3	4,389.3	926.6
2017	Point	315.6	188.8	75.6	24.0	298.5	108.4
	All other	3,018.7	5,170.0	20,038.2	28.2	4,347.4	886.7

Year / Source Type[1]		Emissions (tons/year)					
		NO_x	CO	ROG	SO_x	PM_{10}	$PM_{2.5}$
2018	Point	308.4	184.8	76.3	23.1	301.3	107.6
	All other	3,107.0	19,465.1	21,019.7	132.8	5,773.4	2,092.5
2019	Point	308.4	185.5	77.0	23.2	304.6	107.8
	All other	3,017.8	19,327.3	20,985.1	132.7	5,771.1	2,090.1
2020	Point	313.8	192.5	68.9	23.0	273.8	102.1
	All other	2,896.8	19,214.5	20,905.0	132.7	5,747.9	2,077.9
Project Construction		4.45	25.68	0.94	0.06	2.23	0.65
Project Operation		0.65	0.68	2.05	0.003	0.04	0.02

[1] All other sources include stationary aggregated, areawide, on-road mobile, other mobile, and biogenic.

Table 4.2-11. Colusa County Historical Region-Wide Daily Pollutant Emissions

Year / Source Type[1]		Emissions (tons/day)					
		NO_x	CO	ROG	SO_x	PM_{10}	$PM_{2.5}$
2010	Point	1.52	0.50	0.20	0.04	1.11	0.32
	All other	11.64	24.37	57.91	0.15	12.66	3.17
2011	Point	1.25	0.73	0.22	0.33	1.00	0.34
	All other	11.04	23.11	56.15	0.14	12.48	3.09
2012	Point	1.16	0.67	0.21	0.28	1.07	0.37
	All other	14.23	355.92	79.37	2.41	45.05	30.59
2013	Point	1.23	0.53	0.25	0.32	1.04	0.35
	All other	10.05	18.15	55.76	0.09	12.12	2.69
2014	Point	1.09	0.61	0.22	0.28	0.86	0.26
	All other	9.70	17.64	55.59	0.09	12.12	2.68
2015	Point	0.95	0.52	0.25	0.06	0.77	0.30
	All other	9.89	44.43	57.38	0.39	15.09	5.16
2016	Point	0.95	0.93	0.32	0.08	1.00	0.46
	All other	8.68	15.73	55.19	0.09	12.03	2.54
2017	Point	0.86	0.52	0.21	0.07	0.82	0.30
	All other	8.27	14.16	54.90	0.08	11.91	2.43
2018	Point	0.84	0.51	0.21	0.06	0.83	0.29
	All other	8.51	53.33	57.59	0.36	15.82	5.73
2019	Point	0.84	0.51	0.21	0.06	0.83	0.30
	All other	8.27	52.95	57.49	0.36	15.81	5.73
2020	Point	0.86	0.53	0.19	0.06	0.75	0.28
	All other	7.94	52.64	57.27	0.36	15.75	5.69
Project Construction		0.031	0.104	0.004	0.0003	0.011	0.003
Project Operation		0.007	0.010	0.007	0.00002	0.001	0.0005

[1] All other sources include stationary aggregated, areawide, on-road mobile, other mobile, and biogenic.

IMPACT 4.2-3: *Would the project expose sensitive receptors to substantial pollutant concentrations?*

Less Than Significant Impact with Mitigation Incorporated. The Project consists of construction of a solar energy facility that may have the potential to affect nearby sensitive

receptors. As shown in Figure 4.2-1, there are only two sensitive receptors (residences) located within 1,000 feet of the Project boundary. The sensitive receptors are residences to the south of the Project and south of the proposed gen-tie line. There are no schools, daycare centers, hospitals, or other sensitive receptors in the Project vicinity. Diesel particulate matter will be minimized by using Tier 4 engines and good operational practices as noted below. Construction emissions will be temporary in nature. Operational emissions will be minimal and will occur intermittently for Project maintenance.

The nearest population center, the City of Williams, is located approximately 6.5 miles northeast of the site. Sensitive receptors in Williams and their distances to the site include:

- Liz Kidz Daycare, located 5.8 miles northeast of the Project boundary;
- Williams Elementary School, located 6.4 miles from the Project boundary; and
- Mid Valley High School, located 6.4 miles from the Project boundary.

In addition to the large distance from the Project to sensitive receptors, mitigated pollutant impacts during construction and operation would not result in emissions of criteria pollutants in excess of established BCAQMD thresholds.

Mitigation Measure AQ-2 would limit diesel particulate matter from construction activities. The Project would also use ultra-low sulfur diesel fuels (less than or equal to 5 parts per million by weight sulfur).

Based on the temporary nature and the time frame for construction, these measures will reduce construction emissions and impacts to levels that are in compliance with the CCAPCD air quality regulations.

BCAQMD also identifies significance thresholds for TAC that are based on localized impacts. These include a maximum incremental lifetime cancer risk greater than 10 in 1 million, a chronic and acute hazard index (i.e., ratio of concentrations to Reference Exposure Levels) of one or more, and an annual diesel particulate matter concentration of 0.3 µg/m^3. The primary TAC emitted from construction activities is diesel PM (as $PM_{2.5}$); however, because emissions of TACs from diesel-powered construction equipment are expected to be minimal, intermittent, and of short duration, the Project is not expected to substantially increase ambient concentrations of TACs regionally or locally. There are only two residences within 1,000 feet of the Project and no other sensitive receptors in the 1,000-foot radius from the Project boundaries. Therefore, the Project would not expose sensitive receptors to substantial pollutant concentrations. As such, localized impacts to off-site sensitive receptors would be less than significant.

Another potential TAC that may impact sensitive receptors is natural occurring asbestos (NOA). NOA has been identified by the CARB as a toxic air contaminant. Serpentine and ultramafic rocks, which may contain NOA, are found in certain mountainous areas of Colusa County. A review of geologic formations within the Project site indicates no ultramafic rocks present (California Department of Conservation 2021). Figure 4.2-2 presents a geologic map of the Project area showing the location of ultramafic (serpentine rock).

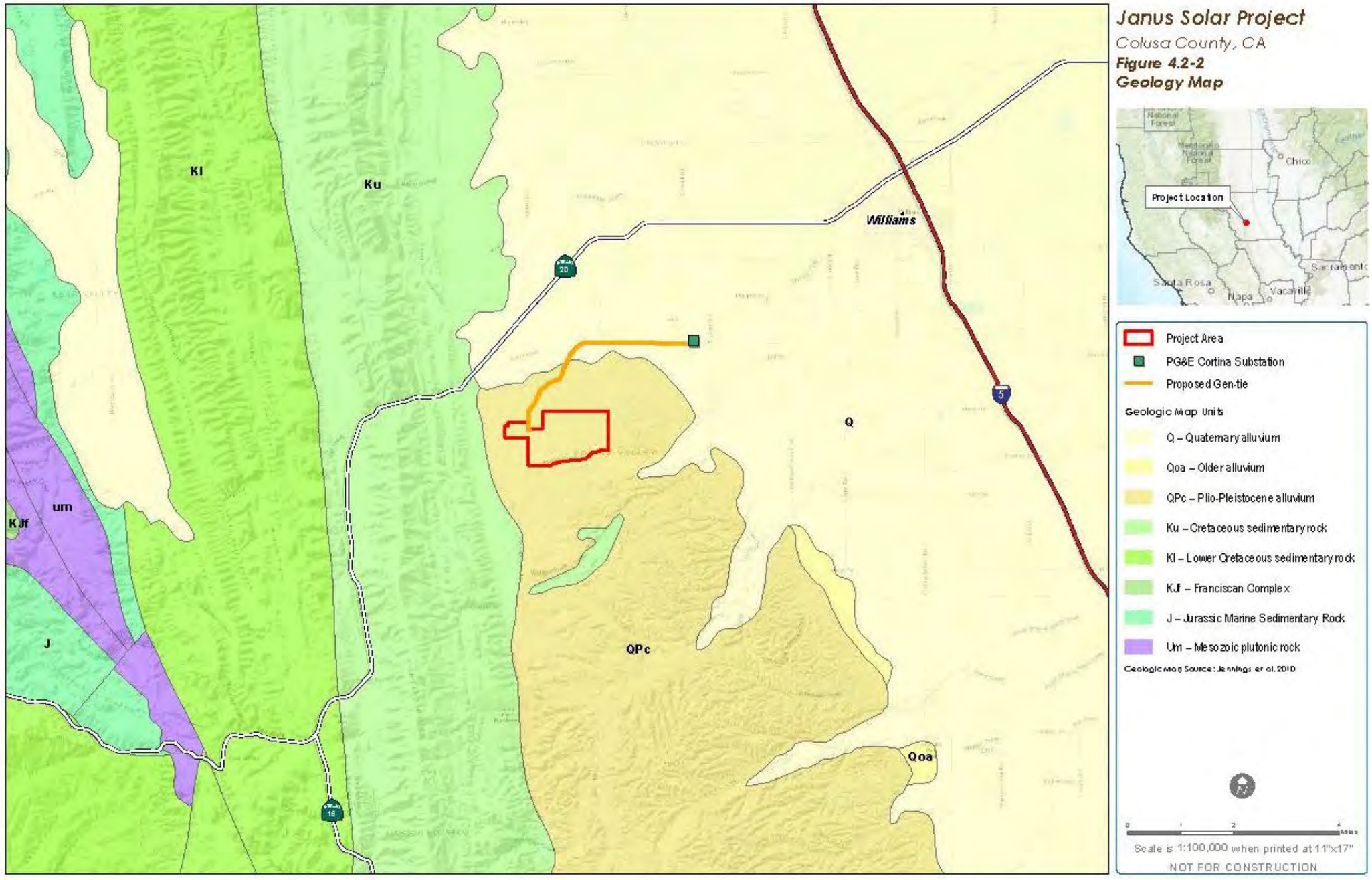


Figure 4.2-2 Geology Map

IMPACT 4.2-4: *Would the project create objectionable odors affecting a substantial number of people?*

Less Than Significant Impact. The land use surrounding the Project site is rural. Properties are currently being used for cattle grazing, agriculture, and open space. The closest residence is approximately 100 feet to the south of the Project site, and the next closest residence is approximately 400 feet south of the proposed gen-tie line. During Project-related construction activities, various diesel-powered vehicles and equipment could create minor odors. These odors are not likely to be noticeable beyond the immediate vicinity and would be temporary and short-lived. Therefore, construction odor impacts would be less than significant.

Long-term odors are associated typically with industrial projects involving use of chemicals, solvents, petroleum products, and other strong-smelling elements used in manufacturing processes. Odors are also associated with such uses as sewage treatment facilities and landfills. The Project involves no elements related to these types of uses. Therefore, no long-term odor impacts would occur with Project implementation.

4.2.7 Mitigation Measures

The following mitigation measures are recommended to reduce significant impacts to air quality:

AQ-1: Dust Control Measures

During construction of the Project, the primary construction contractor shall implement the following practices:

- All disturbed areas, including soil piles, areas that have been graded, and unpaved roads, shall be watered twice daily during dry conditions and when feasible covered and enclosed.
- When materials are transported offsite, they shall be wetted and covered securely and at least 2 feet of freeboard shall be maintained.
- Limit traffic speeds on unpaved roads to 15 miles per hour
- Curtail construction activities when the County's Air Quality Index exceeds 150.

AQ-2: Construction Equipment Requirements

During construction, diesel particulate filters or other CARB-verified diesel emission control strategies shall be installed on construction equipment. All on- and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the 5-minute idling limit. All construction equipment shall be maintained in proper tune according to the manufacturer's specifications. Equipment must be checked and determined to be running in proper condition before the start of work. Idling, staging and queuing of diesel equipment within 1,000 feet of sensitive receptors shall be limited.

4.2.8 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission line that would extend from where the Applicant's gen-tie line terminates at the boundary of the PG&E's property at the Cortina Substation to the available

PG&E Cortina substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements would be made within the existing Cortina Substation footprint.

Through the implementation of **Mitigation Measure AQ-1** and **AQ-2**, these improvements would not have a substantial adverse effect on any applicable air quality plans. Nor would the improvements cause an increase in pollutants that may be considered as non-attainment by federal or state standards. The Cortina Substation improvements would not expose any sensitive receptors to substantial pollutants or any objectional odors. Therefore, no further mitigation is required.

4.2.9 Cumulative Impacts

The SVAB is considered the area of cumulative effects, and it is currently in non-attainment for the California AAQS for PM_{10}. Therefore, there is an existing adverse cumulative impact in SVAB relative to these pollutants.

The contribution of a project's individual air emissions to regional air quality impacts is a cumulative effect due to the collective nature of the air quality resource. Emissions from past, present, and future projects in the region also have or will contribute to adverse regional air quality impacts on a cumulative basis. No single project by itself would be sufficient in size to result in non-attainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality conditions. The project-level thresholds for criteria air pollutants are based on levels by which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. As Project construction emissions would be below thresholds, the Project's incremental contribution to the cumulative impact in the region would not be considered cumulatively considerable. Additionally, as discussed above, the Project, with mitigation incorporated, would not conflict with or obstruct implementation of air quality plans. Therefore, the Project construction and decommissioning would not result in a cumulatively considerable increase in emissions of non-attainment pollutants.

Project emissions of pollutants for which SVAB is in attainment for state and federal air quality standards also would not lead to a cumulative impact because the individual Project emissions would be well below the thresholds in an area that does not experience violations of these standards.

The BCAQMD considers TAC emissions to be localized impacts. The BCAQMD has established thresholds of significance for TACs that are conservative and protective of health impacts on sensitive receptors. As discussed in **IMPACT 4.2-3**, the Project is not expected to substantially increase ambient concentrations of TACs regionally or locally. Therefore, the Project would not result in a cumulatively significant impact related to TACs. Similarly, odor impacts from the Project would be very minimal and localized and would not contribute to cumulative odors impacts in the area.

4.2.10 References

BCAQMD (Butte County Air Quality Management District). 2014. Air Quality Handbook. Guidelines for Assessing Air Quality and Greenhouse Gas Impacts for Projects Subject to CEQA Review. October 2014. https://bcaqmd.org/wp-content/uploads/CEQA-Handbook-Appendices-2014.pdf.

California Department of Conservation. 2021. *Geologic Map of California*. Accessed May 2021. Geologic Map of California.

CARB (California Air Resources Board). 2021a. Appendix C Maps and Tables of Designations for State and National Ambient Air Quality Standards. February 2021. https://ww3.arb.ca.gov/regact/2021/sad20/appc.pdf

CARB. 2021b. "iADAM: Air Quality Data Statistics." Accessed July 2021. https://www.arb.ca.gov/adam/topfour/topfour1.php.

Colusa County. 2012. *General Plan.* July 2012 https://www.countyofcolusa.org/137/General-Plan.

EPA (U.S. Environmental Protection Agency). 2021. "AirData: Access to Air Pollution Data." Last updated February 2021. Accessed May 2021. http://www.epa.gov/airdata/ad_rep_mon.html.

NOAA NCDC (National Oceanic and Atmospheric Administration National Climatic Data Center). 2021. *Data Tools: 1981-2010 Normals*. Accessed April 2021. 1981-2010 Normals | Data Tools | Climate Data Online (CDO) | National Climatic Data Center (NCDC) (noaa.gov).

SVAQEEP (Sacramento Valley Air Quality Engineering and Enforcement Professionals). 2015. *Northern Sacramento Valley Planning Area 2015 Triennial Air Quality Attainment Plan.* August 2015. https://www.fraqmd.org/files/cc5597e19/2015+Triennial+AQAP.pdf.

4.3 AESTHETICS

This section identifies and evaluates issues related to Aesthetic Resources in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received no scoping comments regarding Aesthetic Resources.

4.3.1 Aesthetics Concepts and Methodology

Individuals' values, familiarity with a landscape, concern for a landscape, or interpretation of scenic quality can lead to varying individual determinations of scenic quality and varying individual responses to changes made to a landscape. Due to unique individual attachments to values for a particular landscape, visual changes will inherently affect viewers differently. However, general assumptions can be made about viewer sensitivity to scenic quality and visual changes. For the purpose of this analysis, visual or aesthetic resources are defined as both the natural and built features of the landscape that contribute to the public's experience and appreciation of a given environment.

4.3.2 Visual Change Criteria

Visual impacts are generally defined in terms of a project's physical characteristics and potential visibility, as well as the extent to which the project's presence would change the perceived visual character and quality of the environment in which it would be located. Tetra Tech followed the contrast rating system used by the U.S. Bureau of Land Management (BLM) to objectively measure potential changes to the visual environment (BLM 1986). The BLM's contrast rating system is commonly used by federal agencies to assess potential visual resource impacts from proposed projects.

Potential visual impacts were characterized by determining the level of visual contrast introduced by the Project based on comparing existing conditions and photo simulations. The Visual Impacts Assessment is included as Appendix D. Visual contrast is a means to evaluate the level of modification to existing landscape features. Existing landscape is defined by the visual characteristics (form, line, color, and texture) associated with the landform (including water), vegetation, and existing development. The level of visual contrast introduced by a project can be measured by changes in the visual characteristics that would occur as a result of project implementation. The greater the difference between the character elements found within the existing landscape and with a proposed project, the more apparent the level of visual contrast. The following general criteria[1] were used when evaluating the degree of contrast:

- *None* – The contrast is not visible or perceived.
- *Weak* – The contrast can be seen but does not attract attention.
- *Moderate* – The element contrast begins to attract attention and begins to dominate the characteristic landscape.
- *Strong* – The element contrast demands attention, would not be overlooked, and is dominant in the landscape.

[1] These criteria are based on the BLM Visual Resource Management system, a process using the concept of "contrast" to objectively measure potential changes to the landscape features.

4.3.3 Viewshed

The viewshed is generally the area that is visible from an observer's viewpoint and includes the screening effects of intervening vegetation and/or physical structures. Although some portion of the project site may be visible from a relatively large area, the degree of visibility would depend on distance and view angle. Generally, the Project site would be most visible from viewpoints within 1 mile, while site visibility would diminish as distance increases and view angle decreases. Air quality, including dust and other visible particulates, can affect visibility in the area. Distance is only one of the factors that determine visibility of a site from a viewpoint. Terrain, vegetation, and structural features can obscure views that might otherwise be available at a certain distance.

4.3.4 Key Observation Points

Key Observation Points (KOPs) were identified based on locations from which the Project infrastructure would potentially be visible and noticeable to the casual observer. The "casual observer" is considered an observer who is not actively looking or searching for the Project, but who is engaged in activities at locations with potential views of the Project, such as hiking or driving along a scenic road. If the Project infrastructure is not noticeable to the casual observer, visual impacts can be considered minor to negligible.

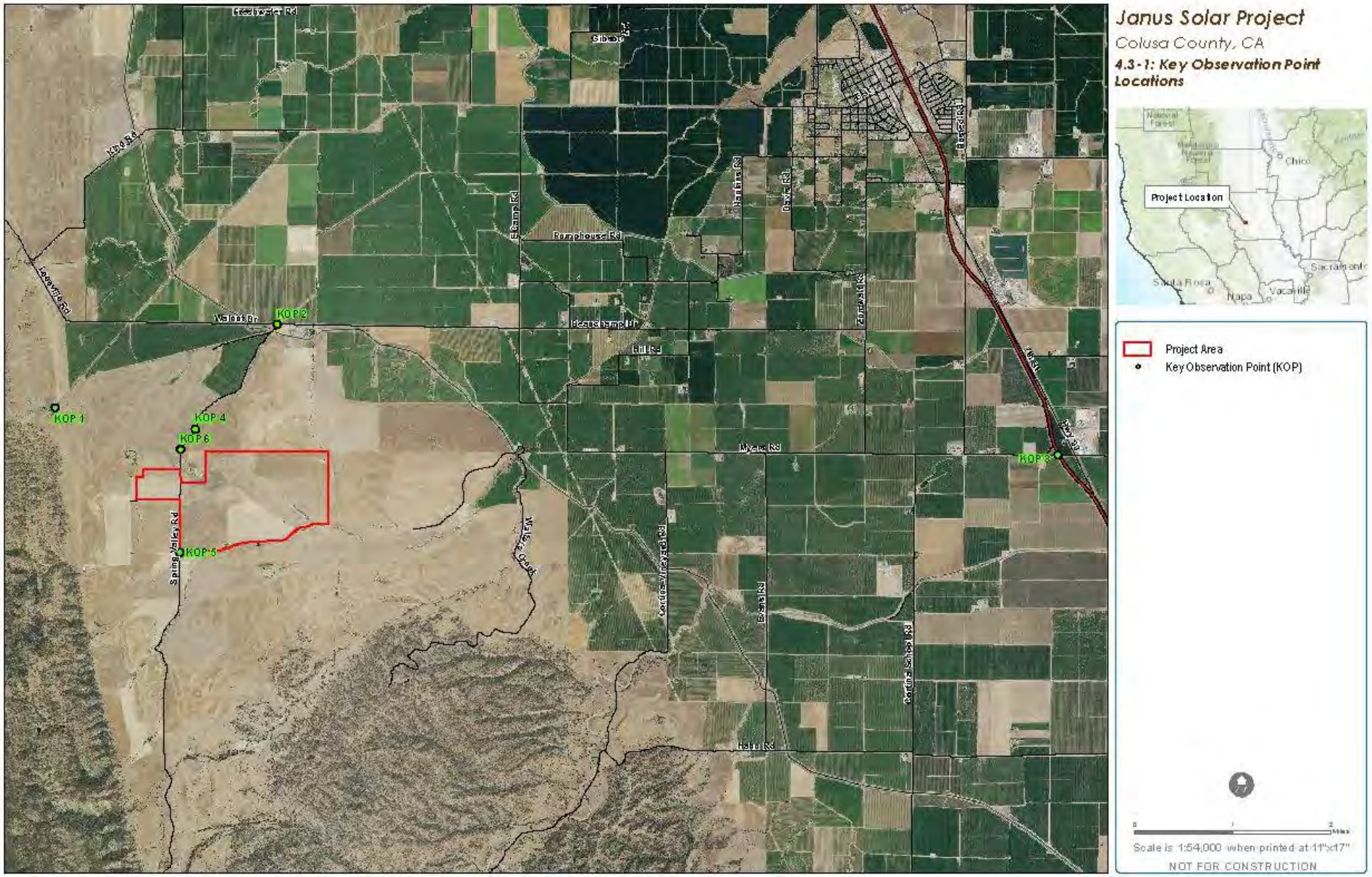
Six KOPs were selected as representative vantage points in the landscape that offer motorists traveling on area roadways and local residents' views of the proposed Project site (Figure 4.3-1). These KOPs provide views of each side of the Project site from publicly accessible areas.

Factors considered in the selection of KOPs included locations with sensitive viewers (e.g., local residences, motorists on nearby roadways) and potential for the Project site to be visible (e.g., distance and view angle). The KOPs were selected to capture representative vantages from Interstate (I)-5, local roadways, and residences.

Digital photographs were taken from the selected KOP locations to support the discussion on existing visual setting and the analysis of potential visual impacts associated with the proposed Project site (Figures 4.3-2 through 4.3-4). Photographs of existing conditions were taken on March 17, 2021 using a digital single-lens reflex Canon 5D Mark III camera.

4.3.5 Visual Simulations

Three-dimensional visual simulations from three representative KOP photographs were rendered to approximate the visual conditions resulting with Project implementation. Using the photographs acquired at each KOP, a three-dimensional physical massing model was created that incorporated the PV scale model, placed in array configurations. The model was then georeferenced and placed on global positioning system (GPS)–controlled site-specific photographs to create simulations that demonstrate visual changes from the Project. Figures 4.3-5 through 4.3-7 present simulated views of Project features.


Janus Solar Project
Colusa County, CA
4.3-1: Key Observation Point Locations
Project Location
Chico
Sacramento
Santa Rosa
Napa
Vacaville
Project Area
Key Observation Point (KOP)
KOP 1
KOP 2
KOP 3
KOP 4
KOP 5
KOP 6
Freeborder Rd
Sibley
King Rd
Leguna Rd
Walnut Dr
Pumphouse Rd
Beauchamp Dr
Hill Rd
Myers Rd
Spring Valley Rd
Cortina-Vina Rd
Bonita Rd
Cortina School Rd
Hahn Rd
Scale is 1:54,000 when printed at 11"x17"
NOT FOR CONSTRUCTION

Key Viewpoint plan

KOP 1: EXISTING CONDITIONS

Photograph Information

Time of photograph:	4:11pm
Date of photograph:	3/16/21
Weather condition:	Mostly Sunny
Viewing direction:	Southeast
Latitude:	39°6'28.12"N
Longitude:	122°18'20.09"W

KOP 2: EXISTING CONDITIONS

Photograph Information

Time of photograph:	3:33pm
Date of photograph:	3/16/21
Weather condition:	Mostly Sunny
Viewing direction:	South
Latitude:	39°07'12.69"N
Longitude:	122°15'44.95"W

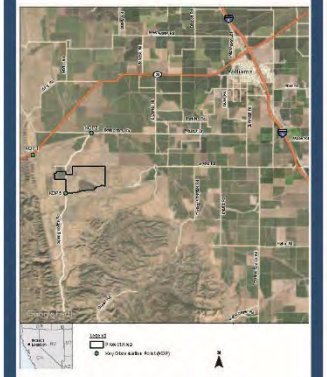
JANUS SOLAR PROJECT

Colusa County, CA

EXISTING CONDITION

Figure 4.3-2

KOP 1 and KOP 2 Existing Conditions



Disclaimer: visualizations and plans are for reference only; Not for construction

TETRA TECH RWE

Key Viewpoint plan

KOP 3: EXISTING CONDITIONS

Photograph Information

Time of photograph:	4:55pm
Date of photograph:	3/16/21
Weather condition:	Mostly Sunny
Viewing direction:	West
Latitude:	39°6'3.89"N
Longitude:	122°6'54.84"W

KOP 4: EXISTING CONDITIONS

Photograph Information

Time of photograph:	3:01pm
Date of photograph:	3/16/21
Weather condition:	Mostly Sunny
Viewing direction:	South
Latitude:	39°6'17.19"N
Longitude:	122°16'43.96"W

JANUS SOLAR PROJECT

Colusa County, CA

EXISTING CONDITION

Figure 4.3-3

KOP 3 and KOP 4 Existing Conditions

Disclaimer: visualizations and plans are for reference only; Not for construction

TETRA TECH RWE

Key Viewpoint plan

KOP 5: EXISTING CONDITIONS

Photograph Information

Time of photograph:	12:47pm
Date of photograph:	3/16/21
Weather condition:	Sunny
Viewing direction:	North
Latitude:	39°05'11.75"N
Longitude:	122°16'54.41"W

KOP 6: EXISTING CONDITIONS

Photograph Information

Time of photograph:	11:07am
Date of photograph:	3/16/21
Weather condition:	Cloudy
Viewing direction:	East
Latitude:	39°6'5.94"N
Longitude:	122°16'54.43"W

JANUS SOLAR PROJECT

Colusa County, CA

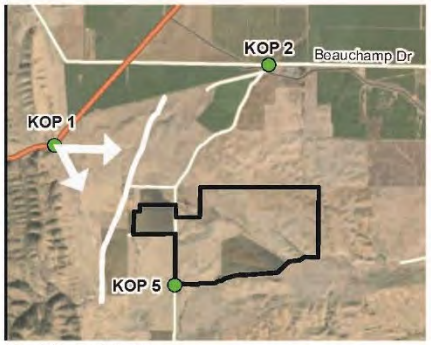
EXISTING CONDITION

Figure 4.3-4

KOP 5 and KOP 6 Existing Conditions

Disclaimer: visualizations and plans are for reference only; Not for construction

TETRA TECH RWE



Key Viewpoint plan

EXISTING CONDITIONS

SIMULATED CONDITIONS

JANUS SOLAR PROJECT

Colusa County, CA

PHOTO SIMULATION

Figure 4.3-5
Point 01:
State Highway 20

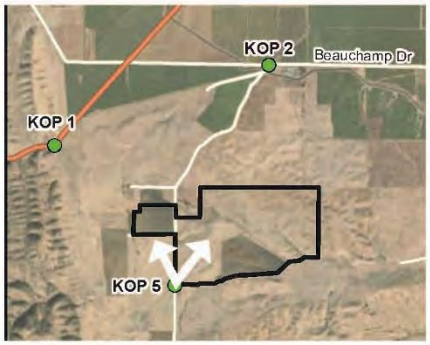
Photograph Information

Time of photograph:	4:11pm
Date of photograph:	3/16/21
Weather condition:	Mostly Sunny
Viewing direction:	Southeast
Latitude:	39°6'28.12"N
Longtitude:	122°18'20.09"W

Disclaimer: visualizations and plans are for reference only; Not for construction

TETRA TECH RWE


KOP 2
Beauchamp Dr
KOP 1
KOP 5
Key Viewpoint plan
EXISTING CONDITIONS
Project Area is obscured by existing terrain and vegetation, as indicated by yellow overlay
SIMULATED CONDITIONS
JANUS SOLAR PROJECT
Colusa County, CA
PHOTO SIMULATION
Figure 4.3-6
Key Observation Point 02:
Beauchamp Dr
Photograph Information
Time of photograph: 3:33pm
Date of photograph: 3/16/21
Weather condition: Mostly Sunny
Viewing direction: South
Latitude: 39°07'12.69"N
Longitude: 122°15'44.95"W
Disclaimer: visualizations and plans are for reference only; Not for construction
TETRA TECH
RWE



Key Viewpoint plan

EXISTING CONDITIONS

SIMULATED CONDITIONS

JANUS SOLAR PROJECT

Colusa County, CA

PHOTO SIMULATION

Figure 4.3-7

Key Observation Point 05:
Spring Valley Rd

Photograph Information

Time of photograph:	12:47pm
Date of photograph:	3/16/21
Weather condition:	Sunny
Viewing direction:	North
Latitude:	39°05'11.75"N
Longtitude:	122°16'54.41"W

Disclaimer: visualizations and plans are for reference only; Not for construction

TETRA TECH RWE

4.3.6 Existing Conditions

4.3.6.1 Regional Character

The Project is within the northwestern Sacramento Valley, which is part of the Great Central Valley Geomorphic Province (Beck and Haase 1974). The province is comprised of a large northwest trending alluvial plain situated between the Coast Ranges to the west and the Sierra Nevada Range to the east. Specifically, the Project is within the low eastern foothills of the Coast Ranges, situated in Spring Valley and near the foot of the Cortina Ridge east facing slope. The topography of the Project is slightly flat with undulating low foothills. A geographic feature, Bunker Hill, is located within the central portion of the Project. The elevation across the Project ranges from 240 to 328 feet above median sea level. Salt Creek is located near the southern Project boundary and an east to west trending ephemeral drainage (possibly a tributary of Spring Creek) crosses the southwest portion of the area of potential significant impact. The Project is roughly 12 miles west of the Sacramento River and is within the Colusa Basin Watershed which is part of the Sacramento National Wildlife Refuge Complex.

4.3.6.2 Local Setting

The elevation across the Project ranges from 240 to 328 feet above median sea level. The Project site currently supports cattle grazing and grain cultivation. Vegetation on the Project site includes non-native grassland, cultivated grain fields, low growing herbaceous plants, and disturbed riparian areas and drainages with sparse native and non-native trees, as well as non-native cultivated trees rows along the proposed gen-tie.

4.3.6.3 Scenic Routes/Vista Points

According to the California Department of Transportation (Caltrans) Scenic Highway System Lists, there are no officially designated state scenic highways. However, there are two eligible state scenic highways, State Route (SR)-16 and SR-20, in Colusa County. The sections of SR-16 and SR-20 that are designated as eligible state scenic highways are located approximately 6.5 miles from the Project site (Caltrans 2021). There are no Department of Transportation designated vista points on I-5 near the Project site (Caltrans 2018).

4.3.6.4 Existing Visual Character

Six KOPs were selected to assess the level of visual change resulting from the Project on the existing environment. The location of the six KOPs are presented in Figure 4.3-1. The KOPs were selected to capture representative vantages from I-5 and Myers Road, SR-20, Beauchamp Drive, Spring Valley Road, and residences north and south of the Project site.

Key Observation Point 1

KOP 1 is located on SR-20, approximately 1.1 miles northwest of the Project site. This KOP depicts views oriented southeast toward the Project site. As shown in Figure 4.3-2, the existing landscape setting is characterized by agricultural land relatively flat to moderately rolling terrain. Existing structural features include residences, agricultural buildings, fencing, and transmission lines in the foreground[2]. Vegetation includes grasses, and a few stands of trees. Dominant colors for the landscape are tans, browns, and greens while the structures are white, tan, and brown.

[2] Depending on viewpoint topography, foreground describes an approximate area from 0 to 1 mile, middleground describes an approximate area from 1 to 3 miles, and background describes an approximate area from 3 to 15 miles from the viewpoint.

The vegetation consists of irregular, organic forms: grasses are continuous with a few irregular shaped trees. The linear and horizontal lines associated with the structures are visible but not prominent from this viewpoint. This KOP provides a typical view for drivers traveling along SR-20, likely traveling at a high rate of speed. Considering the short duration of viewing, viewers would have a low viewer sensitivity to the visual changes in the area.

Key Observation Point 2

KOP 2 is located at the intersection of Beauchamp Drive and Spring Valley Road, approximately 1.3 miles north of the Project site. This KOP depicts views oriented south toward the Project site. As shown in Figure 4.3-2, the existing landscape setting is characterized by agricultural land relatively flat to gently rolling terrain. Existing structural features include Spring Valley Road and fencing in the foreground and transmission lines in the middleground. Vegetation includes grasses. Dominant colors for the landscape are green while the structures are gray and brown. The vegetation consists of the irregular, organic forms of contiguous grasses. The linear and horizontal lines associated with the structures are visible and prominent from this viewpoint. This KOP provides a typical view for drivers traveling along Beauchamp Drive and Spring Valley Road. Considering the short duration of viewing, viewers would have a low viewer sensitivity to the visual changes in the area. This KOP also provides a typical view for the occupants of the residence along Beauchamp Drive. Considering the frequent viewing by local residents, viewers would have a moderate sensitivity to the visual changes in the area.

Key Observation Point 3

KOP 3 is located on the Myers Road overpass of I-5, approximately 7.4 miles east of the Project site. This KOP depicts views oriented west toward the Project site. As shown in Figure 4.3-3, the existing landscape setting is characterized by agricultural land and buildings with relatively flat terrain in the foreground and steeper terrain associated with the foothills of the Coast Ranges in the background. Existing structural features include roadway infrastructure, residences, agricultural buildings and equipment, fencing, and transmission lines in the foreground. Vegetation includes orchards, ornamental trees and shrubs, and row crops. Dominant colors for the landscape are greens and browns while the structures are gray, white, tan, and brown. The vegetation consists of irregular shaped, organic forms of trees and shrubs. The linear and horizontal lines associated with the structures are visible and prominent from this viewpoint. This KOP provides a typical view for drivers traveling along Myers Road or I-5, likely traveling at a high rate of speed. Considering the short duration of viewing, viewers would have a low viewer sensitivity to the visual changes in the area. This KOP also provides a typical view for the occupants of the residence on Myers Road. Considering the frequent viewing by local residents, viewers would have a moderate sensitivity to the visual changes in the area.

Key Observation Point 4

KOP 4 is located on Spring Valley Road, approximately 0.4 miles north of the Project site. This KOP depicts views oriented southeast toward the Project site. As shown in Figure 4.3-3, the existing landscape setting is characterized by the agricultural land with gently rolling terrain in the foreground and steeper terrain associated with the foothills of the Coast Ranges in the background. Existing structural features include Spring Valley Road, fencing, and utility pole lines in the foreground. Vegetation includes grasses and a stand of trees. Dominant colors for the landscape are tan and green while the structures are gray and brown. The vegetation consists of irregular, organic forms: grasses are continuous with the irregular shaped trees. The linear and

horizontal lines associated with the structures are visible and prominent from this viewpoint. This KOP provides a typical view for drivers traveling along Spring Valley Road. Considering the short duration of viewing, viewers would have a low viewer sensitivity to the visual changes in the area.

Key Observation Point 5

KOP 5 is located on Spring Valley Road, immediately adjacent to the Project site. This KOP depicts views focused northeast toward the Project site. As shown in Figure 4.3-4, the existing landscape setting is characterized by agricultural land with relatively flat terrain in the foreground/middleground and steeper terrain associated with the foothills of the Coast Ranges in the background. Existing structural features include Spring Valley Road, fencing, transmission lines, and a residence and agricultural buildings. Vegetation includes grasses and occasional trees. Dominant colors for the landscape are brown and green while the structures are gray, brown, and white. The vegetation consists of irregular, organic forms: grasses are continuous with the occasional irregular shaped trees. The linear and horizontal lines associated with the structures are visible and prominent from this viewpoint. This KOP provides a typical view for drivers traveling along Spring Valley Road. Considering the short duration of viewing, viewers would have a low viewer sensitivity to the visual changes in the area.

Key Observation Point 6

KOP 6 is located near Spring Valley Road, approximately 0.2 miles north of the Project site. This KOP depicts views oriented east toward the Project site. As shown in Figure 4.3-4, the existing landscape setting is characterized by agricultural land with relatively flat terrain in the foreground/middleground and rolling terrain in the background. Existing structural features include Spring Valley Road and fencing in the foreground. Vegetation includes grasses. Dominant colors for the landscape are brown, tan, and green while the structures are gray and brown. The vegetation consists of irregular, organic forms of contiguous grasses. The linear and horizontal lines associated with the structures are visible and prominent from this viewpoint. This KOP provides a typical view for drivers traveling along Spring Valley Road. Considering the short duration of viewing, viewers would have a low viewer sensitivity to the visual changes in the area. This KOP also provides a typical view for the occupants of the residence west of Spring Valley Road. Considering the frequent viewing by local residents, viewers would have a moderate sensitivity to the visual changes in the area.

4.3.7 Regulatory Setting

4.3.7.1 Federal

National Scenic Byways Program

The National Scenic Byways Program, a part of the Federal Highway Administration, recognizes, preserves, and enhances selected roads throughout the United States as All-American Roads or National Scenic Byways based on one or more archaeological, cultural, historic, natural, recreational, and scenic qualities. According to the Federal Highway Administration's America's Byways website, there are no officially designated National Scenic Byways in the vicinity of the Project site (FHWA 2021).

4.3.7.2 State

Caltrans Scenic Highway Program

State scenic highways are those that are either officially designated as state scenic highways by Caltrans or are eligible for such designation. The scenic designation is based on the amount of natural landscape visible by motorists, the scenic quality of the landscape, and the extent to which development intrudes on the motorist's enjoyment of the view. There are two sections of SR-16 and SR-20 in Colusa County that are designated as eligible state scenic highways located approximately 6.5 miles from the Project site (Caltrans 2021). There are no Department of Transportation designated vista points on I-5 near the Project site (Caltrans 2018).

4.3.7.3 Local

Colusa County

Community Character Element (Colusa County 2012a)

Goal CC-1: Protect the Rural Qualities that make the County and its Communities Distinct from other Counties in California, and Conserve and Enhance the Elements that Contribute to a Favorable Quality of Life

Objective CC-1B: To Maintain and Enhance the Aesthetic Beauty of the County

Policy CC 1-14: Encourage private landowners to maintain their property in a way that contributes to the attractive appearance of the County, while recognizing that many of the land uses in the County, including agriculture and light industry, require a variety of on-site structures, equipment, machinery and vehicles in order to operate effectively.

Policy CC 1-15: Preserve and enhance the rural landscape as an important scenic feature of the County.

Policy CC 1-16: Require all new development to protect the scenic beauty of the County, incorporate high quality site design, architecture, and planning so as to enhance the overall quality of the built environment in the County's communities and create a visually interesting and aesthetically pleasing built environment that respects the rural nature of the County.

Policy CC 1-17: Establish design standards, including community-specific policies, to encourage visually attractive development and lessen the visual impact of existing non-conforming uses

Conservation Element (Colusa County 2012b)

Goal CON-2: Conserve, protect, and enhance energy, air, and mineral resources.

Objective CON-2A: Use Energy Efficiently and Encourage the Use of Renewable and Sustainable Sources of Energy

Policy CON 2-4: Allow alternative energy production infrastructure (such as solar panel arrays) that limits energy generation to the amount necessary to support on-site uses in all land use designations as a principally permitted use, provided that the project complies with the following:
a. Does not detract from the visual character from the area and are either screened or designed to blend with the other uses on the site…

Open Space and Conservation Element (Colusa County 2012c)

Goal OSR-1: Preserve and Protect the Natural Resources and Scenic Beauty of the County

Objective OSR 1-C: Maintain and Enhance the Quality of the County's Scenic and Visual Resources

Policy OSR 1-10: To the maximum extent feasible, maintain and protect views of the County's scenic resources, including water bodies, the Sutter Buttes, Snow Mountain, St. John Mountain, Goat Mountain, unique geologic features, and wildlife habitat areas.

Policy OSR 1-11: To the maximum extent feasible, the significant open space resources in the County, such as the western foothills, Indian Valley, and Bear Valley should remain visually undisturbed.

Policy OSR 1-12: Limit visually intrusive development near scenic resources in order to minimize visual impacts to the greatest extent feasible.

Policy OSR 1-13: Visual impacts to scenic resources, such as regional focal points, from new development or resource extraction activities shall be addressed and mitigated through the CEQA review process.

Policy OSR 1-14: Reduce light and glare from artificial lighting within open space and agricultural areas to the extent that it does not adversely impact the County's rural character.

Objective OSR 1-D: Encourage the Preservation of Scenic Vistas and Limit the Proliferation of Unsightly Signage along County Roadways and in Scenic Areas Policy

OSR 1-15: Protect roadway viewsheds with high scenic value and "rural flavor" and encourage the establishment of public viewing areas in areas with rural character and scenic beauty.

Policy OSR-1-16: Protect and preserve the following features along rural character corridors and in scenic areas to the extent appropriate and feasible:

- Trees, wildflowers, and other natural or unique vegetation
- Landforms and natural or unique features
- Views and vistas, including expansive views of open space and agricultural lands
- Historic structures (where feasible), including buildings, bridges, and signs

Policy OSR 1-17: Provide a greater number of areas along rural character corridors and in scenic areas for public access and recreation, including vistas, rest stops, or picnicking.

Policy OSR 1-18: Discourage non-agricultural or non-recreational roadside commercial and industrial activities along rural character corridors.

Policy OSR 1-19: Design new roads in hillside areas along the lines of the landscape and in a manner which minimizes visual impact from surrounding areas.

4.3.8 Thresholds of Significance

A project would result in significant impacts to aesthetic resources if it would:

a) *Have 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 area, would substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations of governing scenic quality?*

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

4.3.9 Impact Analysis

IMPACT 4.3-1: *Would the project have substantial adverse effect on a scenic vista?* **(No Impact)**

No designated scenic vistas are located within visible distance of the Project site. The Project site and surrounding area includes existing agricultural land and buildings, residences, and utility infrastructure. The Project area is not a scenic vista or visible from any designated scenic vista. No impact on scenic vistas would occur.

IMPACT 4.3-2: *Would the project substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?* **(No Impact)**

There are no officially designated state scenic highways in the vicinity of the Project site. The sections of SR-16 and SR-20 that are designated as eligible state scenic highways are located approximately 6.5 miles from the Project site. Due to terrain and distance, the Project site is not visible from these sections of these highways, therefore, no impact to a scenic highway will occur.

IMPACT 4.3-3*: In non-urbanized area, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations of governing scenic quality?* **(Less than Significant Impact)**

The Project site is rural in character with a wide variety of visual encroachments, including scattered ranch structures, agricultural buildings and infrastructure, fencing, local electrical distribution lines and high-voltage transmission lines, and roadways.

Construction

The proposed Project would involve both temporary and permanent changes to the visual character of the site. Temporary changes are associated with construction activities, including construction equipment, staging, and Site construction. These visual impacts would be short-term in nature and are not considered to be significant.

Operation

KOP 1

The Project would introduce dark gray color, geometric shapes, and horizontal lines into the landscape setting; however, the Project would barely be visible from this location by a casual observer because of the screening of the Project site by rolling terrain and vegetation, see Figure 4.3-5. The colors, regular geometric forms and horizontal lines associated with the solar arrays and associated infrastructure would result in a visual contrast with the irregular, organic forms and colors of the existing landform and vegetation. However, the structures in the vicinity also possess horizontal and vertical lines (residences, agricultural buildings, fencing, and transmission lines). The portions of the Project that are visible would not attract attention and would be a subordinate feature in the landscape setting. This viewpoint reflects the views of drivers traveling along SR-20. These impacts would be short term for travelers because they would only be paralleling the Project site for a limited time and their focus would be on the road ahead. As the contrast is anticipated to be weak from Viewpoint 1, the visual impacts are considered minor and less than significant.

KOP 2

The Project would introduce dark gray color, geometric shapes, and horizontal lines into the landscape setting; however, the Project would not be visible from this location by a casual observer because of the screening of the Project site by rolling terrain, see Figure 4.3-6. This viewpoint reflects the views of drivers traveling along Beauchamp Drive and Spring Valley Road and the views of the occupants of the residence along Beauchamp Drive. As the Project would not be visible from this location by a casual observer, there would be no visual impacts from Viewpoint 2.

KOP 3

The Project would introduce dark gray color, geometric shapes, and horizontal lines into the landscape setting; however, the Project would barely be visible from this location by a casual observer because of the screening of the Project site by distance and vegetation. The colors, regular geometric forms and horizontal lines associated with the solar arrays and associated infrastructure would result in a visual contrast with the irregular, organic forms and colors of the existing landform and vegetation. However, the structures in the vicinity also possess horizontal and vertical lines (roadway infrastructure, residences, agricultural buildings and equipment, fencing, and transmission lines) and some are colored gray (roadway infrastructure, agricultural buildings and equipment, transmission lines). The portions of the Project that are visible would not attract attention and would be a subordinate feature in the landscape setting. This viewpoint reflects the views of drivers traveling along Myers Road or I-5. These impacts would be short term for travelers because they would only be approaching or paralleling the Project site for a limited time and their focus would be on the road ahead. As the contrast is anticipated to be weak from Viewpoint 3, the visual impacts are considered minor. This viewpoint also reflects the views of the occupants of the residence along Myers Road. The Project would not block views of the foothills of the Coast Ranges. For views from residences, while appearing as new and highly visible features, the Project infrastructure, including the new poles for the gen-tie, would be consistent with other horizontal and vertical lines and geometric shapes visible throughout the landscape. The contrast is anticipated to be weak from Viewpoint 3 and the portion of the Project that would be visible would be sub-dominate in the landscape, therefore the contrast and the visual impact are considered to be minor and less than significant.

KOP 4

The Project would introduce dark gray color, geometric shapes, and horizontal lines into the landscape setting; however, the Project would not be visible from this location by a casual observer because of the screening of the Project site by rolling terrain. This viewpoint reflects the views of drivers traveling south along Spring Valley Road. As the Project would not be visible from this location by a casual observer, there would be no visual impacts from Viewpoint 4.

KOP 5

The Project would introduce dark gray color, geometric shapes, and horizontal lines into the landscape setting and would be visible from this location by a casual observer, see Figure 4.3-7. The colors, regular geometric forms and horizontal lines associated with the solar arrays and associated infrastructure would result in a visual contrast with the irregular, organic forms and colors of the existing landform and vegetation. However, the structures in the vicinity also possess horizontal and vertical lines (roadway, fencing, transmission lines, a residence, agricultural buildings) and some are colored gray (roadway, fencing, transmission lines). This viewpoint reflects the views of drivers traveling north along Spring Valley Road. As the Project would attract attention to the casual observer and the portion of the Project that would be visible would co-dominate the landscape, the contrast would be considered moderate. These impacts would be short term for travelers because they would only be approaching the Project site for a limited time and their focus would be on the road ahead.

This viewpoint also reflects the views of the occupants of the residence south of the Project site. For views from the residence, while appearing as new and highly visible features, the Project infrastructure, including the new gen-tie poles, would be consistent with other horizontal and vertical lines and geometric shapes visible throughout the landscape. As the Project would attract attention to the casual observer and the portion of the Project that would be visible would co-dominate the landscape, the contrast would be considered moderate. However, the Project would not block views of the surrounding agricultural open space or the foothills of the Coast Ranges. Therefore, the impacts would be less than significant.

KOP 6

The Project would introduce dark gray color, geometric shapes, and horizontal lines into the landscape setting and would be visible from this location by a casual observer. The colors, regular geometric forms and horizontal lines associated with the solar arrays and associated infrastructure would result in a visual contrast with the irregular, organic forms and colors of the existing landform and vegetation. However, the structures in the vicinity also possess gray color and horizontal and vertical lines (roadway, fencing). This viewpoint reflects the views of drivers traveling along Spring Valley Road. These impacts would be short term for travelers because they would only be approaching or paralleling the Project site for a limited time and their focus would be on the road ahead. This viewpoint also reflects the views of the occupants of the residence west of Spring Valley Road. For views from residence, while appearing as new and highly visible features, the Project infrastructure, including the new gen-tie poles, would be consistent with other horizontal and vertical lines and geometric shapes visible throughout the landscape. As the Project would attract attention to the casual observer and the portion of the Project that would be visible would co-dominate the landscape, the contrast would be considered moderate. However, the Project would not block views of the surrounding agricultural open space or the foothills of the Coast Ranges. Therefore, the impacts would be less than significant.

IMPACT 4.3-4: *Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?* **(Less Than Significant Impact)**

The Project is not expected to create a substantial new source of nighttime lighting or daytime glare. The proposed Project will provide external safety lighting for both normal and emergency conditions at the primary access points. Lighting will be designed to provide the minimum illumination needed to achieve safety and security and will be downward facing and shielded to focus illumination in the immediate area. All lighting associated with the proposed Project will be subject to County approval and compliance with Colusa County requirements. Therefore, the Project will have a less than significant impact associated with nighttime lighting.

Unlike solar thermal facilities, which rely on large fields of mirrors to reflect light, the potential reflection from solar PV modules is inherently low since they are designed to capture and not to reflect sunlight. PV panels have a lower index of refraction/reflectivity than common sources of glare in residential environments. The glare and reflectance levels from a given PV system are lower than the glare and reflectance levels of steel, snow, standard glass, plexiglass, and smooth water (Shields 2010). The glare and reflectance levels of modules are further reduced with the application of anti-reflective coatings. PV suppliers typically use stippled glass for panels as the "texturing" of the glass to allow more light energy to be channeled/transmitted through the glass while weakening the reflected light. With the application of anti-reflective coatings and use of modern glass technology, Project PV panels would display overall low reflectivity. In addition, because tracker systems follow the sun, the underside of the PV panels and most of the structure supporting them are shadowed throughout the day.

Moreover, light reflected from the PV panels would travel above the line of site of most, if not all, viewers. PV tracking systems position the array so that the sun's rays are always perpendicular to the face of the panel. What light is reflected from the panels is reflected back towards the sun. During midday conditions, when the sun is high in the sky, the rays of the sun are reflected directly upwards. For example, when the sun is low on the horizon (near dawn or dusk), the sun's angle in the sky is low; however, reflected rays would still be directed away from ground-level receptors because the maximum downward angle of the arrays would not be below 30 degrees. Similarly, and also due to their low reflectivity, the panels are not expected to cause visual impairment for motorists on area roadways or pilots arriving and departing at the Williams Airport or Colusa County Airport.

4.3.10 Pacific Gas and Electric Cortina Substation Improvement

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements made would be within the existing Cortina Substation footprint. Construction, operation, maintenance and decommissioning of the PG&E interconnection infrastructure would result in a less than significant impact relating to the potential for a substantial adverse effect on a scenic vista, a substantial degradation of the character or visual quality of views from publicly accessible vantage points (i.e., any of the KOPs), or to substantially damage scenic resources within a state scenic highway. Similarly, because the new infrastructure would not include

substantial new sources of light or glare, the Project-proposed construction and modifications of PG&E infrastructure would have a less than significant impact. No mitigation is required.

4.3.11 Cumulative Impacts

There would be no impact with respect to scenic resources within a state scenic highway or scenic vistas because there are none in the Project study area. Additionally, due to the isolated location and site-specific nature in which glare is experienced, the Project's less than significant impact related to glare could not combine with impacts from other facilities. Therefore, the Project's impact to visual resources resulting from glare would not cause or contribute to a significant adverse cumulative impact.

Generally, projects located 3 miles distant or more from the Project site would not be visible within the same viewshed as the Project. Cumulative aesthetic impacts could occur as long as the Project contributes to visual changes to the landscape that are visible or perceived by the public, either within the same viewpoints, or as a noticeable element in a cumulative viewing experience (e.g., a driver on a local road). Because there are no cumulative projects within the same viewshed of the Project, the Project would not contribute to a significant cumulative impact.

4.3.12 References

Beck, W. A. and Y. D. Haase. 1974. Historical Atlas of California. Oklahoma City, University of Oklahoma Press.

Bureau of Land Management (BLM). 1986. Visual Resource Inventory. *BLM Manual Handbook H-8410-1*.

California Department of Transportation (Caltrans). 2018. California Interstate 5 Exit List. https://dot.ca.gov/-/media/dot-media/programs/traffic-operations/documents/traffic-control/nexus/f0017888-5.pdf. October 8, 2018.

Caltrans. 2021. California Scenic Highway System Map. California State Scenic Highway System Map (arcgis.com). Accessed May 20, 2021.

Colusa County. 2012a. 2030 General Plan. Community Character Element. Microsoft Word - Community Character Element_Colusa_Final.doc (countyofcolusa.org). Accessed May 25, 2021.

Colusa County. 2012b. 2030 General Plan. Conservation Element. Microsoft Word - Conservation Element_Colusa_Final.doc (countyofcolusa.org). Accessed May 25, 2021.

Colusa County. 2012c. 2030 General Plan. Open Space and Conservation Element. Microsoft Word - Open Space and Rec Element_Colusa_Final.doc (countyofcolusa.org). Accessed May 25, 2021.

Federal Highway Administration (FHWA). 2021. America's Byways, California, Central Valley Section Map, https://www.fhwa.dot.gov/byways/states/CA/maps/Central_Valley. Accessed May 25, 2021.

Shields, Mark. 2010. PV Systems: Low Levels of Glare and Reflectance vs. Surrounding Environment.

4.4 BIOLOGICAL RESOURCES

This section describes the biological resources[1] of the proposed Project Area and evaluates habitat conditions to determine the potential for occurrence of common and special-status species[2] and their habitats[3].

Information presented in this section is based on the following reports included in the *Biological Resources*, Appendix E, of this Draft EIR. Biologists from Tetra Tech conducted literature reviews and field surveys of the biological resources potentially associated with the Project site. Estep Environmental Consulting also conducted breeding season surveys and habitat assessment of the Swainson's hawk in the vicinity of the site. The following types of general and focused biological surveys were conducted in 2019, 2020, and 2021:

- Vegetation and habitat mapping
- Rare plant surveys
- Raptor nest surveys
- Swainson's hawk breeding season surveys and habitat assessment
- Protocol burrowing owl (BUOW) burrow survey
- Protocol breeding season and winter season BUOW surveys
- Jurisdictional delineation of wetlands/waters of the United States (U.S.), Waters of the State, and rivers, streams, or lakes regulated by the California Department of Fish and Wildlife (CDFW)

The analysis is based on the Project-specific biological resources technical reports that are listed below. Each technical report has been prepared on the Applicant's behalf and copies can be found in Appendix E, *Biological Resources*.

1. Habitat Characterization Report (Tetra Tech 2020)
2. Biological Survey Report (Tetra Tech 2021a)
3. Burrowing Owl Survey Report (Tetra Tech 2021b)
4. Jurisdictional Delineation Report (Tetra Tech 2021c)
5. The Distribution, Abundance, and Habitat Associations of Nesting Swainson's Hawks (*Buteo swainsoni*) in the Vicinity of the Proposed Janus Solar Project (Estep Environmental Consulting 2021)

[1] For the purposes of this analysis, "biological resources" refers to the plants, wildlife, and habitats that occur, or have the potential to occur, within the biological study area.

[2] For the purposes of this analysis, "special-status species" refers to any species that has been afforded special protection by federal, state, or local resource agencies (e.g., United States Fish and Wildlife Service, California Department of Fish and Wildlife) or resource conservation organizations (e.g., California Native Plant Society). The term "special-status species" excludes those avian species solely identified under Section 10 of the Migratory Bird Treaty Act for federal protection. Nonetheless, Migratory Bird Treaty Act Section 10 protected species are afforded avoidance and minimization measures per state and federal requirements.

[3] A "habitat" is defined as the place, or type of locale where a plant or animal naturally or normally lives and grows.

4.4.1 Existing Conditions

Site Setting

The Project site is located in northern California within the Sacramento Valley Subregion of the Great Central Valley Region (Jepson Flora Project [eds.] 2020). This region experiences hot, dry summers, mild winters, and annual rainfall averaging between roughly 5 and 25 inches. Elevation at the Project site ranges from approximately 144 to 331 feet. The Project site currently supports cattle grazing and grain cultivation. Vegetation on the Project site includes non-native grassland, cultivated grain fields, low growing herbaceous plants, and disturbed riparian areas and drainages with sparse native and non-native trees, as well as non-native cultivated tree rows along the proposed gen-tie line. Wetlands and standing water also occur in small areas on the Project site (Tetra Tech 2020, 2021c).

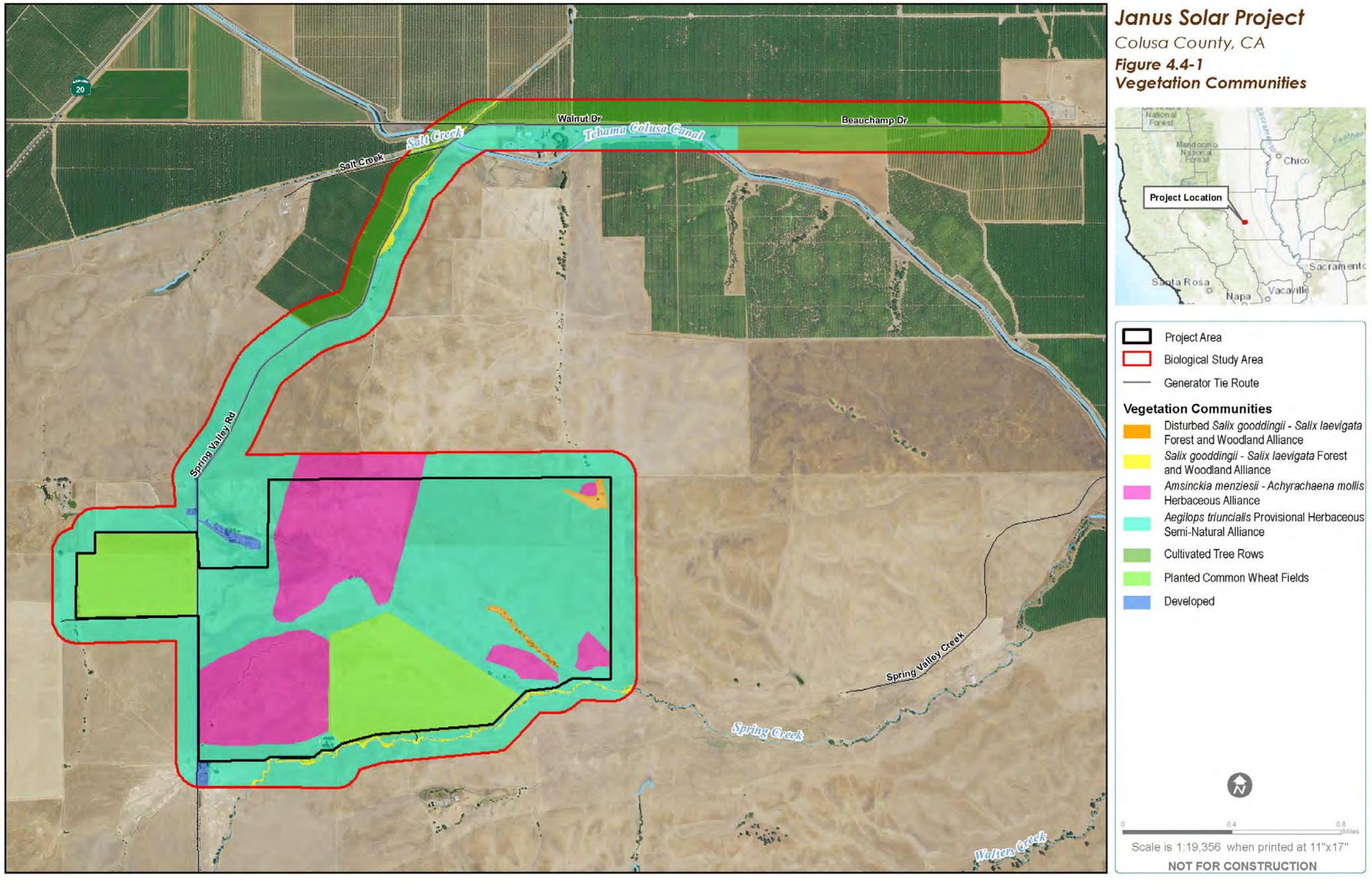
Plant Communities

Vegetation communities were mapped within the Biological Survey Area (BSA) during the surveys, which is defined as the Project site and 150-meter buffer. No CDFW sensitive natural communities were found. All vegetated areas of the Project site have previously been or are currently being used for grazing and/or cultivation of common wheat. Table 4.4-1 summarizes the vegetation communities and their corresponding acreage; acreage includes the Project site and 150-meter buffer (i.e., the BSA). The vegetation communities are shown in Figure 4.4-1. Descriptions of the communities are provided below.

Table 4.4-1 Vegetation Communities

Vegetation Communities	Acres within BSA
Aegilops triuncialis Provisional Herbaceous Semi-Natural Alliance	955.9
Amsinckia menziesii – Achyrachaena mollis Herbaceous Alliance	292.3
Cultivated Tree Rows	247.1
Planted Common Wheat Fields	225.4
Developed	24.8
Salix gooddingii – Salix laevigata Forest and Woodland Alliance	14.9
Disturbed *Salix gooddingii – Salix laevigata* Forest and Woodland Alliance	8.9
Total acres	**1,769.3**

Note: Total acres include the Project site and 150-meter buffer.



Janus Solar Project

Colusa County, CA

Figure 4.4-1
Vegetation Communities

- Project Area
- Biological Study Area
- Generator Tie Route

Vegetation Communities

- Disturbed *Salix gooddingii - Salix laevigata* Forest and Woodland Alliance
- *Salix gooddingii - Salix laevigata* Forest and Woodland Alliance
- *Amsinckia menziesii - Achyrachaena mollis* Herbaceous Alliance
- *Aegilops triuncialis* Provisional Herbaceous Semi-Natural Alliance
- Cultivated Tree Rows
- Planted Common Wheat Fields
- Developed

0 0.4 0.8 Miles

Scale is 1:19,356 when printed at 11"x17"

NOT FOR CONSTRUCTION

Over 50 percent of the BSA consisted of non-native grasslands in the *Aegilops triuncialis* Provisional Herbaceous Semi-Natural Alliance. This alliance is considered a semi-natural alliance, which is defined as a vegetation community dominated by non-native plants that are naturalized (i.e., growing in the wild and reproducing) in California. In addition, nearly 30 percent of the BSA consisted of cultivated tree rows, planted common wheat fields, or developed areas, which provide poor quality habitat for native plants and wildlife. Trees in the cultivated tree rows or developed areas can provide nesting habitat for birds. The remainder of the BSA consisted of areas dominated by native forbs in the *Amsinckia menziesii – Achyrachaena mollis* Herbaceous Alliance, and small areas dominated by native willows in the *Salix gooddingii – Salix laevigata* Forest and Woodland Alliance.

Mature trees were found within the Project site, including native willows in the *disturbed Salix gooddingii – Salix laevigata* Forest and Woodland Alliance, and a small stand (approximately nine trees total) consisting of native northern California black walnut, non-native pepper tree, non-native elm, and fan palm in the southwestern portion of the site.

***Aegilops triuncialis* Provisional Herbaceous Semi-Natural Alliance.** This non-native grassland community was the most common community throughout the Project site and was dominated by non-native barbed goat grass (*Aegilops triuncialis*) and non-native oat (*Avena sp*.). Other species that were common in this community were non-native yellow star thistle (*Centaurea solstitialis*) and native hayfield tarweed (*Hemizonia congesta*). Barbed goat grass and yellow star thistle are both rated high (i.e., highly invasive) by the California Invasive Plant Council (Cal-IPC 2021a, Cal-IPC 2021b). The California Invasive Plant Council defines invasive plants as: plants that are not native to an environment, and once introduced, they establish, quickly reproduce and spread, and cause harm to the environment, economy, or human health (Cal-IPC 2021c). All areas of this community on the Project site were actively grazed by cattle.

***Amsinckia menziesii – Achyrachaena mollis* Herbaceous Alliance.** This native forb community was dominated by native common fiddleneck (*Amsinckia menziesii*) and native soft blow wives (*Achyrachaena mollis*). Other species found in this community were native miniature lupine (*Lupinus bicolor*), native purple owl's-clover (*Castilleja exserta*), native Tejon cryptantha (*Cryptantha microstachys*), native vinegarweed (*Trichostema lanceolatum*), non-native yellow star thistle, and non-native oat. Cover of native forbs in this community in April ranged from 50 percent in the northwestern portion of the Project site to 10–20 percent in the northeastern, southeastern, and southwestern portions of the site.

Cultivated Tree Rows. These areas consisted of cultivated almond (*Prunus dulcis*) tree rows within the 150-meter buffer of the gen-tie route.

Planted Common Wheat Fields. These areas consisted of densely planted common wheat for grain production. Soils within this community are actively disked/tilled.

Developed. These areas included houses, barns/storage sheds, paved and dirt roads, and non-native ornamental species such as eucalyptus and rosemary (*Rosmarinus officinalis*). These areas were found outside the Project site and within the 150-meter buffer.

***Salix gooddingii – Salix laevigata* Forest and Woodland Alliance.** This native riparian community was dominated by native Goodding's black willow (*Salix gooddingii*) and native red

willow (*Salix laevigata*). Other species found in this community were native Fremont cottonwood (*Populus fremontii*), native northern California black walnut, and non-native edible fig *(Ficus carica*). This community occurred outside of the Project site and within the 150-meter buffer.

Disturbed Salix gooddingii – Salix laevigata **Forest and Woodland Alliance**. This native riparian community was similar to the version above but was heavily disturbed by intensive cattle grazing. This community occurred in the northeast and southeast portions of the Project site and was dominated by sparse native Goodding's black willow and native red willow. Native Fremont cottonwood was also found in this community.

In the northeast portion of the Project site, this community contained muddy soils and the low point had standing water seasonally. Disturbed native willows, one mature native Fremont cottonwood, canary grass (*Phalaris sp*.), non-native bindweed (*Convolvulus arvensis*), and non-native goosefoot (*Chenopodium sp*.) were present in this area. Based on aerial imagery and National Wetlands Inventory (NWI) data, this area appears to have historically connected to a drainage to the north but large soil berms are currently present that create ponding. A portion of this area was found to be a jurisdictional wetland during the wetland delineation (Tetra Tech 2020c).

In the southeast portion of the Project site, plant species in this community included native willows and native Fremont cottonwood. Based on aerial imagery and NWI data, this area appears to have historically connected to other drainages to the north and south; however, due to intensive grazing of the Project site, this connection was no longer evident.

Plants and Wildlife

The proposed Project site supports an assortment of plants and wildlife and provides shelter, cover, roosting, foraging, and breeding habitats to mammals, birds, invertebrates, reptiles, and amphibians as year-round residents, seasonal residents, and/or migrants. Overall, the Project site supports low quality wildlife habitat since it is disturbed by cattle grazing and grain cultivation and lacks complex vegetation communities. During the 2019, 2020, and 2021 field surveys, 93 native and non-native plant species, six mammals, 35 birds, six invertebrates, three reptiles, and two amphibian species were recorded within the BSA. A list of plant and wildlife species recorded during the field surveys is provided in Appendix E, *Biological Resources* (Tetra Tech 2021a).

Special-Status Species

Special-status species are plants and wildlife that require special consideration or protection at State and/or Federal levels due to vulnerability from human environmental impacts or population decline of the species. Critical Habitat is also designated for certain species that are listed as threatened or endangered under the Federal Endangered Species Act. No Critical Habitat occurs at/on the Project site. Table 4.4.2 presents the special-status species observed on the Project site during the field surveys or with moderate to high potential to occur on the site.

Table 4.4-2 Special-Status Species

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Summary
Centromadia parryi ssp. *rudis*	Parry's rough tarplant	None	None/4.2	Eight populations of Parry's rough tarplant were found within the Project site in 2020 (total of approximately 463 individuals) as shown in Figure 4.4-2. One population was found outside the Project site but within the BSA. The populations were generally located on previously disturbed soils with relatively higher cover of bare ground and lower cover of non-native grasses.
Athene cunicularia	burrowing owl	None	SSC	BUOWs were observed during the November 2020 cultural survey and the January 2021 winter season BUOW survey (Figure 4.4-3).
Buteo swainsoni	Swainson's hawk	None	Threatened	Two adult Swainson's hawks were briefly observed within the central portion of the Project site on the ground, perched on a cattle fence, and flying overhead during the rare plant survey in 2020. In addition, one active Swainson's hawk nest was found in 2020 within the 5-mile raptor survey buffer, approximately 2.5 miles from the northeast end of the generator tie line at the Cortina substation and over 4 miles from the main Project site boundary (Figure 4.4-4). Additional active nests were found in the vicinity of the proposed Project during separate Swainson's hawk surveys in 2021 (Estep Environmental Consulting 2021). The locations of these nests are shown in Appendix E, *Biological Resources* (Estep Environmental Consulting 2021; Figure 7).
Circus hudsonius	northern harrier	None	SSC	Two northern harriers were observed flying overhead during the field spot check in November 2019 and approximately three harriers were observed during the surveys in 2020. Nesting is not likely on the Project site, as this species is not tolerant of disturbance when nesting (The Cornell Lab 2019).
Falco columbarius	merlin	None	None/WL	One merlin was observed perching on the Project site during the field spot check in November 2019. Merlin nesting does not occur in California.
Falco mexicanus	prairie falcon	None	None/WL, BCC	One prairie falcon was observed foraging and perching in the vicinity of the Project site in 2020 but no nests were found. This species is unlikely to nest within the Project site because cliff/bluff nesting habitat is not present on the site.
Lanius ludovicianus	loggerhead shrike	None	SSC	Individuals of this species were observed foraging and perching in the vicinity of the Project site in 2019 and 2020 but no nests were found. The Project site provides only limited potential nesting sites (i.e., trees and shrubs) and is heavily disturbed by consistent active grazing.

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Summary
Plegadis chihi	white-faced ibis	None	None/WL	Numerous individuals of this species were observed in 2021 foraging in grasslands within the Project site but no nests were found. This species would not nest within the Project site because preferred nesting sites (i.e., dense, freshwater emergent wetland and extensive marshes) do not occur. In addition, this species no longer breeds regularly anywhere in California (California Department of Fish and Game 2005).
Taxidea taxus	American badger	None	SSC	American badger was not observed during the surveys and no large underground holes or potential burrows/dens were found in the vicinity of the Project site that would be considered suitable for habitation by this species. Seven culverts of sufficient size, which were found in 2020 along existing roads within the Project site and 150-meter buffer, are sometimes used by this species for refuge or to pass safely beneath roads (Figure 4.4-3).

Notes: 4.2 = California Native Plant Society watch list; BCC = United States Fish and Wildlife Service Birds of Conservation Concern; S = BLM Sensitive Species; SSC = CDFW Species of Special Concern; WL = CDFW Watch List.

Parry's rough tarplant

Parry's rough tarplant (*Centromadia parryi* ssp. *Rudis*) is a California Native Plant Society (CNPS) Rank 4.2, indicating that the species is of limited distribution or infrequent throughout a broad area in California, and is moderately threatened in the state (20 to 80 percent of occurrences are threatened). This species is known to occur in valley and foothill grassland and vernal pool habitats as well as disturbed areas.

Eight populations of Parry's rough tarplant were found within the Project site in 2020 with a total of approximately 463 individuals (Figure 4.4-2). One population was found outside the Project site but within the BSA. The populations were generally located on previously disturbed soils with relatively higher cover of bare ground and lower cover of non-native grasses. Additional details are provided in Appendix E, *Biological Resources* (Tetra Tech 2021a).

Burrowing Owl

The BUOW is a California Species of Special Concern and a United States Fish and Wildlife Service (USFWS) Bird of Conservation Concern. BUOW can be found throughout California primarily in open areas with short vegetation and bare ground in desert, grassland, and shrub-steppe (i.e., grassland that supports perennial grasses or shrubs) environments (USFWS 2003). They are dependent on the presence of fossorial mammals whose vacant burrows can be used by BUOW for nesting and roosting. BUOW prefers disturbed environments such as agricultural areas, ruderal grassy fields, vacant lots, pastures with sparse vegetation, construction sites, and other urban settings. They may also use debris piles, rip rap, culverts, and large pipes as burrows.

It was determined that the Project site contains suitable BUOW habitat due to low-growing grazed vegetation and agricultural use. Multiple BUOW were identified using burrows on the Project site during the cultural survey in November 2020 and during the winter protocol surveys in January

2021 (Figure 4.4-3). Additional details are provided in Appendix E, *Biological Resources* (Tetra Tech 2021b).

Swainson's Hawk

Swainson's hawk is a California State Threatened species. Most populations are found ranging from the Central Valley to the Great Basin of northeastern California, with some populations in Shasta Valley, Owens Valley, and the Mohave Desert (CDFW 2021). Breeding habitat includes riparian, agricultural environments, oak savannah, and juniper-sage flats (Zeiner 1990). In the Central Valley, Swainson's hawk nest in large trees in woodlands, as well as in roadside trees, trees along field borders, isolated trees, trees around farm houses and farmyards, and in urban areas that are adjacent to cultivated lands (Estep Environmental Consulting 2021). This species nest in California between March 1 and September 15. Swainson's hawk has become dependent on alfalfa crops, as its habitat is increasingly being converted into agricultural lands (CDFW 2021). Populations of Swainson's hawk have declined due to the loss of suitable foraging and nesting habitat.

Swainson's hawk foraging habitat and preferred nesting habitat of solitary or small groves of trees near agricultural fields are present on the Project site (The Cornell Lab 2019). Two adult Swainson's hawks were observed within the central portion of the Project site in 2020. They were observed to be on the ground, perched on a cattle fence, and flying overhead. One active Swainson's hawk nest was found approximately 2.5 miles northeast of the Cortina substation, over 4 miles from the main Project site boundary (Figure 4.4-4). Eleven additional active nests were found in the vicinity of the proposed Project during separate Swainson's hawk surveys in 2021, none were within 1 mile, one was within 5 miles, and ten were within 5 to 10 miles of the site (Estep Environmental Consulting 2021). The locations of these nests are shown in Appendix E, *Biological Resources* (Estep Environmental Consulting 2021; Figure 7).

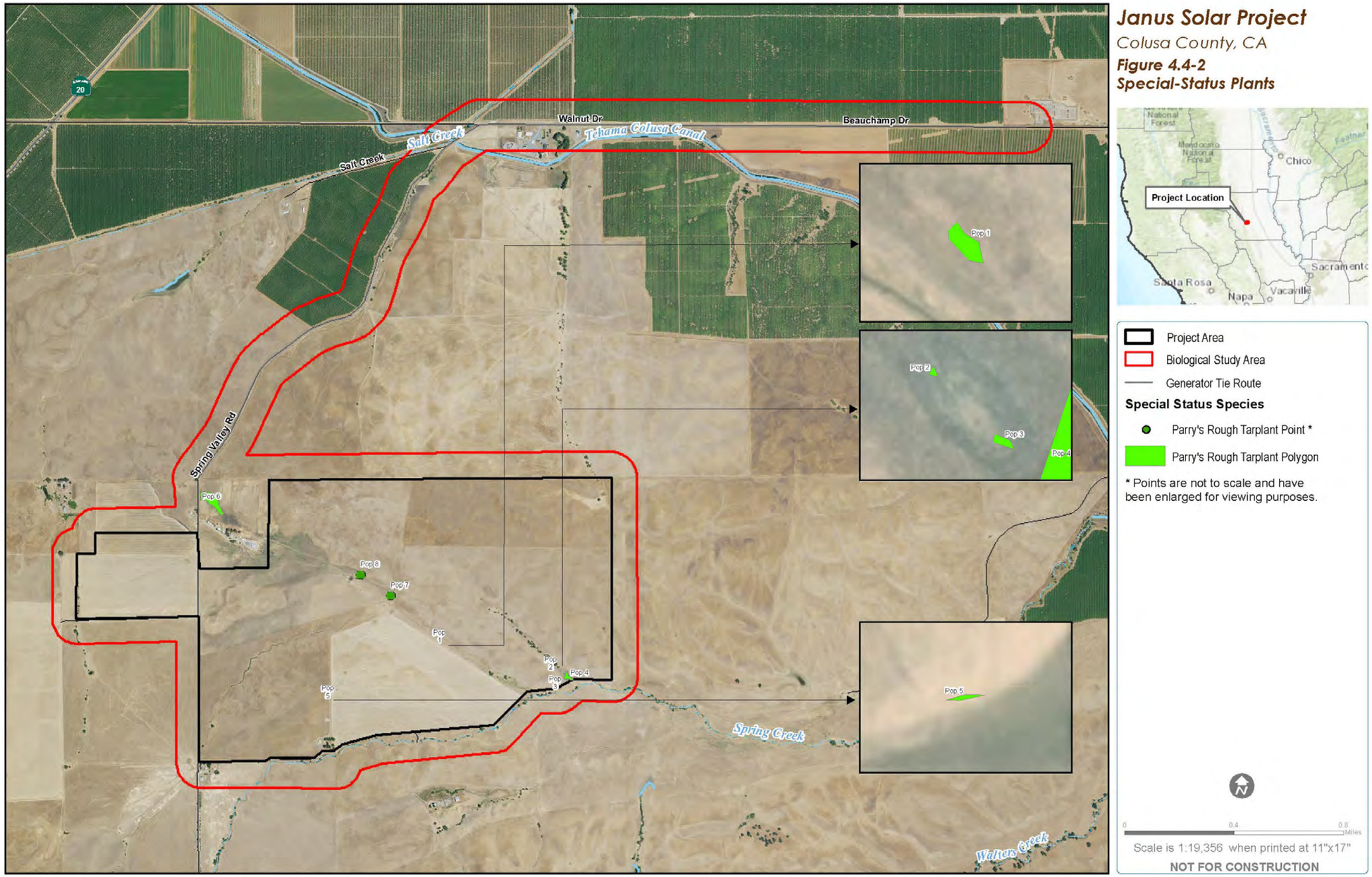
Northern Harrier

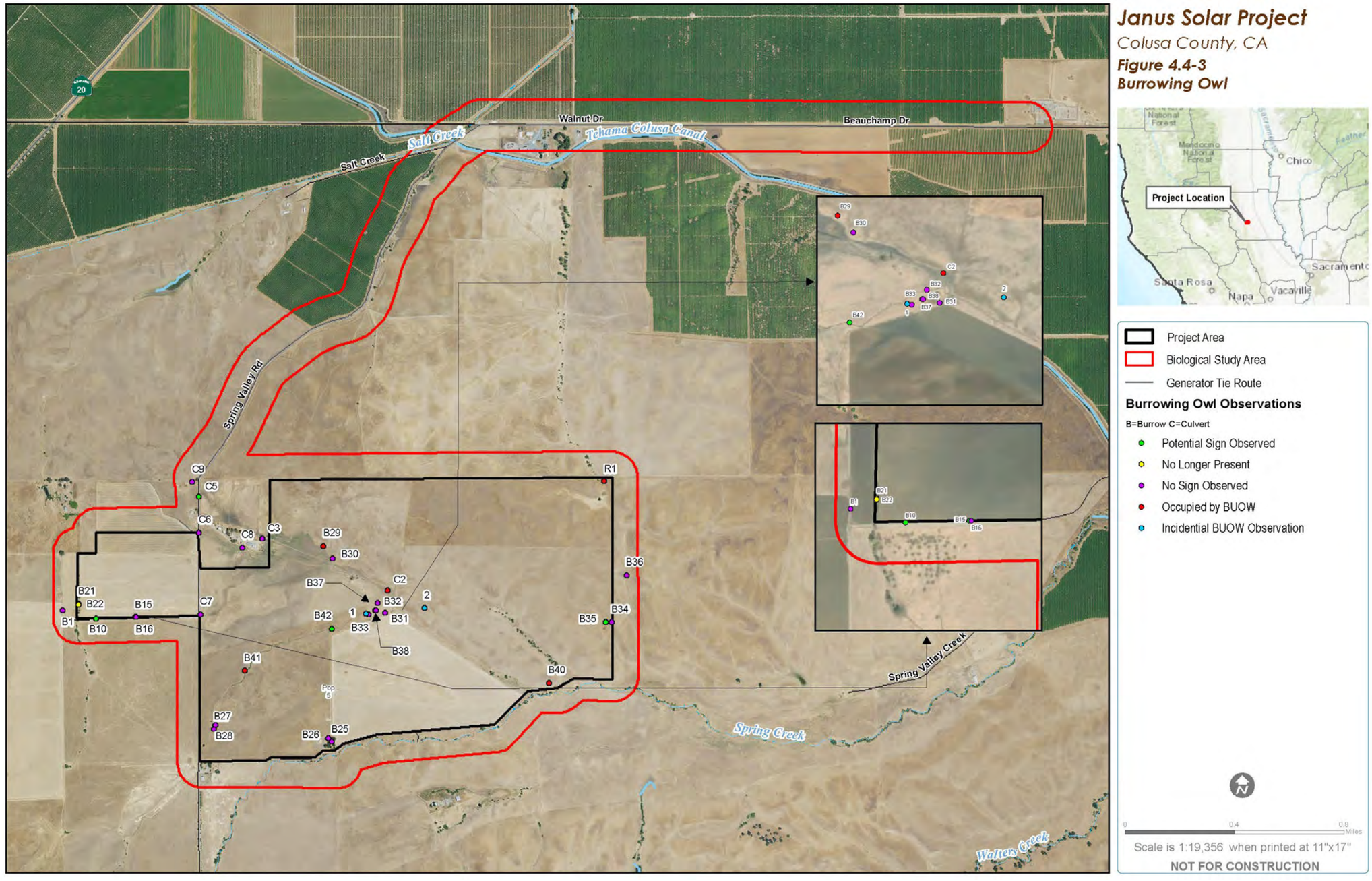
The northern harrier is a California Species of Special Concern. It ranges widely from northern Alaska to Baja California (Shuford et. 2008). In California, the harrier's range extends from the Modoc Plateau to San Diego, primarily found along the humid coast in the northwest and in the arid southeastern deserts (Shuford et. 2008). The harrier most often nests on the ground within dense, tall vegetation in undisturbed areas. Habitat ranges from freshwater marshes and brackish and saltwater marshes to ungrazed or lightly grazed pastures, sage brush flats, and desert sinks (Shuford et. 2008).

Two northern harriers were observed flying overhead during a field spot check in November 2019. Approximately three harriers were observed in the field surveys conducted in 2020. Since this species is not tolerant of disturbance when nesting (The Cornell Lab 2019), nesting is not likely to occur at the Project site as the site is heavily disturbed by consistent grazing.

Merlin

The merlin is a California Watch List species. Merlins use open forest and grassland habitats across North America but do not nest in California. One merlin was observed perching on the Project site during a field spot check in November 2019. Foraging habitat is available on-site. However, this species would not nest at the Project site due to seasonal migration patterns.


Janus Solar Project
Colusa County, CA
Figure 4.4-2
Special-Status Plants
Walnut Dr
Beauchamp Dr
Salt Creek
Tehama Colusa Canal
Spring Valley Rd
Spring Creek
Walters Creek
Pop 1
Pop 2
Pop 3
Pop 4
Pop 5
Pop 6
Pop 7
Pop 8
Project Location
Chico
Santa Rosa
Napa
Vacaville
Sacramento
Project Area
Biological Study Area
Generator Tie Route
Special Status Species
Parry's Rough Tarplant Point *
Parry's Rough Tarplant Polygon
* Points are not to scale and have been enlarged for viewing purposes.
0
0.4
0.8
Miles
Scale is 1:19,356 when printed at 11"x17"
NOT FOR CONSTRUCTION



Janus Solar Project

Colusa County, CA

Figure 4.4-3
Burrowing Owl

Project Area
Biological Study Area
Generator Tie Route

Burrowing Owl Observations

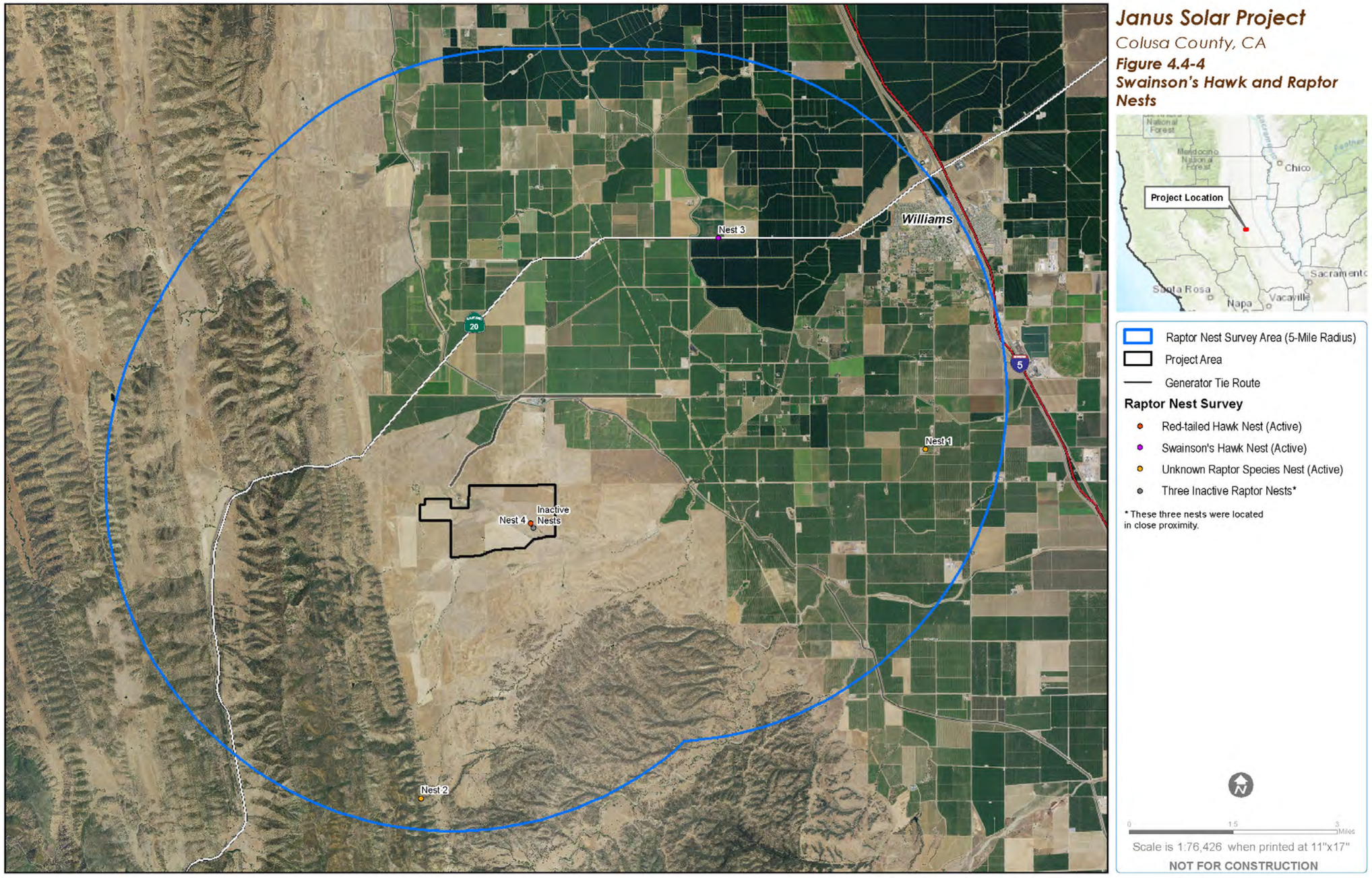
B=Burrow C=Culvert

- Potential Sign Observed
- No Longer Present
- No Sign Observed
- Occupied by BUOW
- Incidential BUOW Observation

0 0.4 0.8 Miles

Scale is 1:19,356 when printed at 11"x17"

NOT FOR CONSTRUCTION



Janus Solar Project

Colusa County, CA

Figure 4.4-4
Swainson's Hawk and Raptor Nests

Raptor Nest Survey Area (5-Mile Radius)
Project Area
Generator Tie Route

Raptor Nest Survey

- Red-tailed Hawk Nest (Active)
- Swainson's Hawk Nest (Active)
- Unknown Raptor Species Nest (Active)
- Three Inactive Raptor Nests*

* These three nests were located in close proximity.

0 1.5 3 Miles

Scale is 1:76,426 when printed at 11"x17"

NOT FOR CONSTRUCTION

Prairie Falcon

Prairie falcon is a USFWS Bird of Conservation Concern. It ranges from southeastern deserts throughout the Central Valley towards the inner Coast Ranges and the Sierra Nevada (Zeiner 1990). Prairie falcons prefer environments that include perennial grasslands, savannahs, rangeland, agricultural fields, and desert scrub (Zeiner 1990). They require sheltered cliff ledges for nesting.

One prairie falcon was observed on-site foraging and perching in 2020. However, no nests of this species were found. In addition, the Project site is not ideal for the prairie falcon to nest because they prefer cliff or bluff nesting habitat that does not occur on the site. Only foraging habitat is available on-site.

Loggerhead Shrike

The loggerhead shrike is a California Species of Special Concern and a USFWS Bird of Conservation of Concern. It is found widely throughout the United States, except in areas of the northwest and northeast, and in Mexico (CDFW 2008). In California, loggerhead shrikes prefer lower elevations throughout the state. Breeding populations are mainly found in areas of the Central Valley, Coast Ranges, and southeastern deserts (Humple 2008). Shrikes prefer breeding habitats of shrublands and open woodlands with a decent amount of grass and bare ground (CDFW 2008). They need tall trees, fences, or utility lines for hunting perches, as well as sharp, thorny, multi-stemmed plants and barbed wire fences for impaling prey or to use for storage (CDFW 2008). Shrikes are found most frequently in riparian woodland, chaparral, oak woodland, oak savannah, and desert scrub (CDFW 2008)

Several loggerhead shrike individuals were observed foraging and perched within the Project site in 2019 and 2020; however, no nests were found. The Project site provides limited nesting sites (i.e., trees and shrubs) and is heavily disturbed by consistent grazing.

White-faced Ibis

The white-faced ibis is a California Watch List species. White-faced ibis are migratory birds that winter in central and southern California. Their preferred habitat includes freshwater marshes, flooded agricultural fields such as rice or alfalfa, and mudflats around lakes and marshes where they can forage for crustaceans, earthworms, and aquatic/moist soil insects (CalRice 2021). They nest in dense, freshwater wetlands, and rarely in trees. However, this species no longer nests regularly in California (California Department of Fish and Game 2005).

Several white-faced ibis were observed foraging on the Project site in 2021; however, no nests were found. Foraging habitat is available on the Project site, but preferred nesting habitat is not available on the site since it is heavily disturbed by regular grazing.

American Badger

The American badger is a California Species of Special Concern. The American badger is a habitat generalist that often occurs in dry, open grasslands, including semi-desert, sagebrush, and meadows. The badger is a fossorial mammal that prefers to dig their burrows in loose soil. Their diet consists of small mammals such as ground squirrels.

No American badgers were observed on the Project site and no large underground holes or potential burrows/dens found in the vicinity of the site were considered suitable for habitation by this species. Seven culverts of sufficient size were found in 2020 along existing roads within the site and in the 150-meter buffer that could be used as refuge or allow badgers to pass safely beneath roads (Figure 4.4-3).

Migratory Birds and Nests

The Project site provides potential nesting habitat for birds and raptors that are protected under the federal Migratory Bird Treaty Act. One active red-tailed hawk nest was observed in a tree on the Project site during field surveys in 2020. In addition, three inactive raptor nests were observed in trees on the Project site.

Hydrology

The Project site is located in the Colusa Basin Watershed which drains into the Sacramento River. Two creeks occur near the Project site; Spring Creek which is adjacent to the Project site at the south, and Salt Creek which is located approximately 1 mile north. Both creeks converge and drain into the Colusa Basin Drain, located approximately 10 miles to the northeast of the Project site. Surface water connectivity on the Project site has been significantly impacted by grazing and agricultural activities. The Project site is predominately flat with low slope rolling hills.

A jurisdictional delineation was conducted in 2021 at the 10 potential jurisdictional features on the Project site (Tetra Tech 2021c). Of these features, only three were determined to be wetlands. Ephemeral drainages on the Project site only have surface flow or standing water in direct response to precipitation.

United States Army Corps of Engineers Defined Wetlands

In 2021, there were three United States Army Corps of Engineers (USACE) defined wetlands identified within the proposed Project site (Tetra Tech 2021c). In order to qualify as a USACE defined wetland, an aquatic feature must exhibit all three wetland parameters (i.e., wetland hydrology, hydric soils, and hydrophytic vegetation). Evidence of hydrology (e.g., surface water) was present within Features 1, 5, and 7 during the 2021 survey. Portions of Feature 1 and all of Features 5 and 7 met the criteria to be classified as a wetland. Feature 1 had low cover of vegetation that was dominated by hydrophytic plants and standing water and/or saturated soils were present. Vegetation present at Feature 1 included red willow (*Salix laevigata*), Fremont cottonwood (*Populus fremontii*), cattail (*Typha sp*.), and rush (*Juncus sp.)*. Additional wetland indicators were observed including hydrogen sulfide odor, water stained leaves, and/or water marks. Features 5 and 7 are depressional ponds where standing water was previously observed and can be observed from aerial imagery (Tetra Tech 2021c). However, no water was observed during the 2021 survey. Features 5 and 7 ranged from low to high vegetation cover that was dominated by hydrophytic plants. Due to the presence of large soil berms on Features 5 and 7, it is hypothesized that the manmade blocks were used to stop flow and create ponding for stock ponds or agricultural use.

Jurisdictional Acreage

The Project site contains jurisdictional wetlands regulated by the USACE, waters of the State regulated by the Regional Water Quality Control Board (RWQCB), and areas regulated by the CDFW (Figure 4.4-5). Features 1, 5, and 7 are determined to be USACE wetlands, and therefore, they are also considered to be waters of the State. No features with wetland hydrology and hydric soils that lacked vegetation were identified on-site that would qualify as waters of the State under the new State wetland definition. Features 1 and 3 have a defined bed, bank, and channel, meeting the criteria for CDFW jurisdiction. Since CDFW does not differentiate lakes from ponds, Features 5 and 7 are considered to be under CDFW jurisdiction.

Table 4.4-3 summarizes the extent of jurisdictional areas mapped within the BSA (Tetra Tech 2021c). The acres in the table below include a portion of Feature 3 that is located outside the Project site but within the 150-meter buffer. Other features that are located within the 150-meter buffer but entirely outside the Project site were not included in the wetland delineation (e.g., Spring Creek).

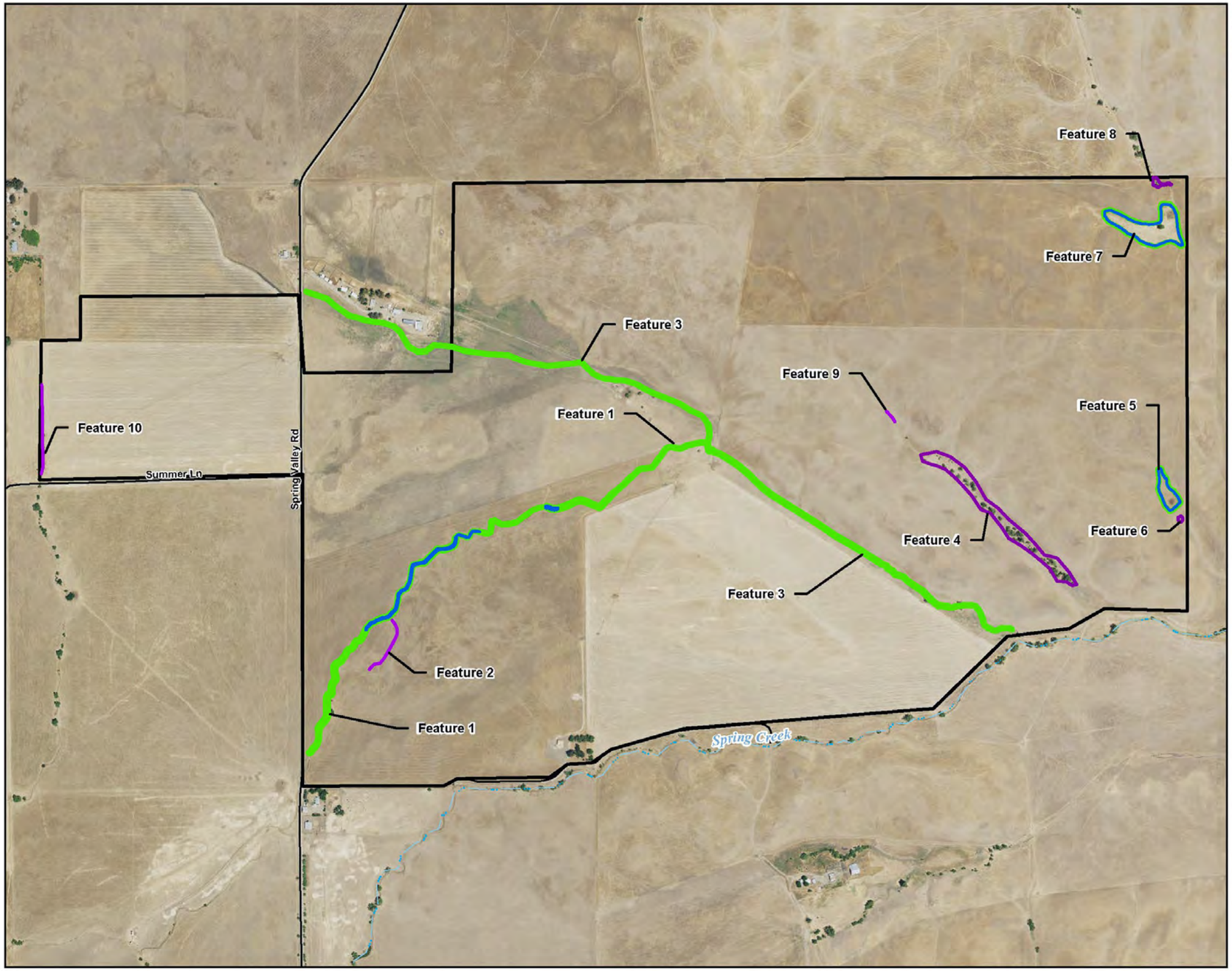
Table 4.4-3. Acreage of Mapped Jurisdictional Areas within the BSA

Sample Area	USACE Wetlands (acres)	RWQCB Waters of the State (acres)	CDFW Jurisdiction (acres)
Feature 1	0.4	0.4	2.3
Feature 3	-	-	2.22
Feature 5	0.8	0.8	0.9
Feature 7	2.8	2.8	3.1
Total	**4.0**	**4.0**	**8.52**

Wildlife Movement

A wildlife corridor is a connection of habitat, generally native vegetation, which joins two or more larger areas of similar habitat that are otherwise separated by natural barriers, changes in vegetation composition, or land permanently altered for human activities, such as farms; and infrastructure, such as roads, railroads, residential development, or fencing. When native vegetation is cleared, fragmented patches of open space or isolated “islands” of wildlife habitat are created. Fragmentation and habitat loss are the two main contributors to continuing biodiversity decline. The main goal of corridors is to facilitate movement of individuals, through dispersal, seasonal migration, and movement for foraging, breeding, cover, etc. Corridors allow for physical and genetic exchange between isolated wildlife populations and are critical for the maintenance of ecological processes, including allowing for the movement of animals and the continuation of viable populations and higher species diversity.

The Project site is designated in the California Habitat Connectivity Project as Rank 4 (CDFW 2021). This designation indicates that habitat connectivity linkages occur in the area. Habitat connectivity linkages represent the best connections between core natural areas to maintain habitat connectivity. However, these linkages are not considered irreplaceable and essential corridors (i.e., Rank 5). The Project site also likely occurs within avian migration routes along western North America and may provide migratory bird stopover habitat.



Janus Solar Project

Colusa County, CA

Figure 4.4-5
Jurisdictional Delineation Results

Project Area

Wetland Delineation

CDFW Jurisdiction*

USACE Wetland and RWQCB Waters of the State*

Feature Boundary (Non-Jurisdictional)*

**Boundary widths not to scale*

0 0.2 0.4 Miles

Scale is 1:10,000 when printed at 11"x17"

NOT FOR CONSTRUCTION

Although wildlife movement studies were not conducted in the Project site, based on the grazing and agricultural use of the site, and that the immediately surrounding areas are heavily influenced by grazing and agriculture, limited opportunities for habitat continuity or wildlife movement are available due to the lack of natural habitat. While disturbed riparian areas and drainages with sparse native and non-native trees occur in the Project site, these areas are fragmented and do not provide connectivity between large areas of natural habitat. Cattle fences are also currently in place around the entire perimeter of and within the Project site, which may impede the movement of some wildlife species. The culverts at the Project site could provide temporary shelter for mammals transiting through the site; however, it is not likely that any portion of the site serves as an important linkage between habitats.

4.4.2 Regulatory Setting

Federal Endangered Species Act

The federal Endangered Species Act of 1973, as amended (Title 16, United States Code [U.S.C] 1531, *et seq*.) designates and provides for protection of federally listed threatened and endangered plant and animal species and their Critical Habitat. The USFWS and National Oceanic and Atmospheric Administration (NOAA) Fisheries share responsibility for administration of the Endangered Species Act. These responsibilities include listing and delisting species, designating critical habitat, and formulating recovery plans. The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NOAA Fisheries are mainly marine wildlife.

The Endangered Species Act is divided into 18 sections that are intended to work together to prevent species from going extinct by helping to stabilize populations, reducing the threats to their survival, and helping species recover to the point that they no longer require federal protection. Once a species is listed, section 9 of the Endangered Species Act makes it unlawful for any person, including private and public entities, to "take" species listed as endangered without a permit issued pursuant to section 10 or an incidental take statement issued pursuant to section 7. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) of 1918 (Title 16, U.S.C. §§703–712), as amended, implements various treaties and conventions between the United States and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. The MBTA makes it unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg or any such bird, unless authorized under a permit issued by the Secretary of the Interior. Some regulatory exceptions apply. "Take" is defined in regulations implementing the MBTA as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to carry out these activities." The MBTA prohibits the collection and destruction of a migratory bird, its nest, and birds or eggs contained in the nest. USFWS' Migratory Bird Permit Memorandum (MBPM-2) dated April 15, 2003, clarifies that destruction of most unoccupied bird nests is permissible under the MBTA; exceptions include nests of federally listed threatened or endangered migratory birds, bald eagles (*Haliaeetus leucocephalus*), and golden eagles (*Aquila chrysaetos*). Take under the MBTA does not include habitat destruction or

alteration, if there is not a direct taking of birds, nests, eggs, or parts thereof. The USFWS has statutory authority and responsibility for enforcing the MBTA.

California Endangered Species Act (Fish and Game Code §2050 et seq.)

The California Endangered Species Act (CESA) was enacted in 1984 to parallel the federal ESA and allows the California Fish and Game Commission to designate species, including plants, as "threatened" or "endangered." The CESA states that all native species of fishes, amphibians, reptiles, birds, mammals, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved. Unlike the ESA, the CESA does not include listing provisions for invertebrate species.

CESA makes it illegal to import, export, take, possess, purchase, sell, or attempt to do any of those actions to species that are designated as threatened, endangered, or candidates for listing, unless permitted by the CDFW. Section 2080 of the California Fish and Game Code prohibits take of any species that the California Fish and Game Commission determines to be an endangered species or a threatened species. "Take" is defined in section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

Under section 2081 of CESA, CDFW may permit take or possession of threatened, endangered, or candidate species for scientific, educational, or management purposes, and may also permit take of these species that is incidental to otherwise lawful activities if certain conditions are met. Some of the conditions for issuance of permits allowing incidental take are that the adverse effects of the take must be minimized and fully mitigated, adequate funding must be ensured for implementation of identified mitigation, and that the activity shall not jeopardize the continued existence of the listed species. CESA emphasizes early consultation to avoid potential impacts on candidate and listed endangered and threatened species, and to develop appropriate mitigation to offset project caused losses of listed species populations and their essential habitats.

California Fish and Game Code

Sections 3511, 4700, 5050 and 5515 - Fully Protected Species

The classification of fully protected was the State of California's initial effort in the 1960s to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for birds (section 3511), mammals (section 4700), amphibians and reptiles (section 5050), and fish (section 5515). Fully protected animal species may not be taken or possessed at any time and no licenses or permits may be issued for their take, except for collecting these species for scientific research and relocation of the species for certain purposes.

Sections 3503, 3503.5, and 3513

California Fish and Game Code section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered take. Avoidance measures sufficient to prevent incidental take of bird nests and eggs protected by this statute must be incorporated into the project.

All raptors and their nests are protected under section 3503.5. Avoidance measures sufficient to prevent incidental take of these species, their eggs and their nests protected by this statute must be incorporated into the project.

California Fish and Game Code section 3513 protects California's migratory birds by making it unlawful to take or possess any migratory non-game bird as designated by the MBTA, except as authorized in regulations adopted by the federal government under provisions of the MBTA. Except as permitted by USFWS under a Habitat Conservation Plan, avoidance measures sufficient to prevent incidental take of these species, their eggs and their nests protected by this statute must be incorporated into the project.

Sections 1900–1913 - Native Plant Protection Act

The Native Plant Protection Act, enacted in 1977, allows the California Fish and Game Commission to designate native plants as state "endangered" or "rare," mirroring the designations created for animal species by the CESA of 1970. The Native Plant Protection Act, administered by CDFW, requires all state agencies to utilize their authority to preserve, protect and enhance endangered or rare native plants of California. Section 1908 of the Act prohibits the take of any native plant that the California Fish and Game Commission determines to be an endangered or rare native plant, except when the take is incidental to agricultural and nursery operations, emergencies, or the possession or sale of real property on which the plant is growing. Section 1913(c) further provides that where the owner of land has been notified by CDFW that native plant listed as rare or endangered is growing on such land, the owner shall notify CDFW at least 10 days in advance of changing the land use to allow for salvage of the listed plant(s) subject to the notification. The failure by CDFW to salvage such plant within 10 days of notification of change in land use shall entitle the owner of the land to proceed with the change.

Federal Clean Water Act

The federal Clean Water Act (CWA) is the principal federal law governing pollution control and water quality of the nation's waterways. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." It establishes the basic structure for regulating discharges of pollutants into Waters of the U.S. and for regulating water quality and establishing water quality standards for surface waters. Sections 404 and 401 of the CWA are pertinent to surface and coastal Waters of the U.S. The CWA provides regulatory authority over the navigable Waters of the U.S. which are defined as the "waters of the United States, including the territorial seas." 33 U.S.C. §1362(7). This statute is implemented by the USACE and the USEPA.

Congress did not define in the CWA what it meant by "Waters of the U.S." and left it up to the USACE and USEPA to provide more detail through rulemaking. Waters of the U.S. are comprised of those wetland and non-wetland bodies of water that met criteria set forth in 33 Code of Federal Regulations section 328.3, as interpreted by several court opinions and guidance. On June 29, 2015, the USACE and USEPA published an amendment to 33 Code of Federal Regulations section 328.3 revising the definition of Waters of the U.S. in a manner intended to consider, but supersede prior judicial decisions, regulations and guidance. The revised regulation, named the "Clean Water Rule" was published in the Federal Register (80 FR 124: 37054-37127) and became effective on August 28, 2015.

The Clean Water Rule was challenged in court and on October 22, 2019, the USACE and USEPA published a final rule (Step One) to repeal the 2015 Clean Water Rule and to restore the regulatory text that existed prior to the 2015 Clean Water Rule. The final rule (Step One) became effective on December 23, 2019.

On April 21, 2020, the USACE and USEPA completed Step Two of the two-step "repeal and replace" process by publishing The Navigable Waters Protection Rule: Definition of “Waters of the United States” in the Federal Register. The Navigable Waters Protection Rule revises the definition of Waters of the U.S. under the CWA. It creates four categories of jurisdictional waters and it provides specific exclusions for many water features that traditionally have not been regulated. The Navigable Waters Protection Rule (Step Two) became effective on June 22, 2020, replacing the final rule (Step One).

California Porter-Cologne Water Quality Control Act

In 1969, the California State Legislature enacted the Porter-Cologne Water Quality Control Act (Porter-Cologne) to revise the existing water quality laws in California. Through the act, the California State Water Resources Control Board (SWRCB) and nine RWQCBs were entrusted with duties and powers to preserve, restore, and enhance the quality of California's water resources. The SWRCB has the ultimate authority over state water rights and water quality policy. The SWRCB adopts statewide water quality control plans, policies and guidance that direct RWQCBs in designating beneficial uses, setting water quality control standards, and administering programs to protect and preserve the “Waters of the State.” Pursuant to these statewide plans, policies and guidance, each of the nine RWQCBs within California is required to adopt a Basin Plan that sets water quality standards, including narrative and numeric water quality objectives for various constituents of concern, recognizing and reflecting the regional differences in existing water quality, the beneficial uses of the region’s ground and surface waters, and local water quality conditions

Pursuant to Porter-Cologne, the SWRCB and RWQCBs, on a statewide and regional basis, respectively, have authority to regulate the “discharge of waste” to “Waters of the State” independently of the CWA and as a matter of state law. Discharges of waste are defined to “include sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation or of human or animal origin, or from any producing, manufacturing or processing operations, include waste placed in containers of whatever nature prior to and for purposes of, disposal.” Cal. Water Code §13050(d). Discharges of fill are included in the Porter-Cologne definition of discharge of “waste.”

“Waters of the State” are defined to mean “any surface water or groundwater, including saline waters, within the boundaries of the state.” Cal. Water Code §13050(e). Under Porter-Cologne, Waters of the State include, but are not limited to, Waters of the U.S. As a matter of state law, any party proposing a discharge of waste, including fill or other pollutants, that threatens to affect any Water of the State that is not also a Water of the U.S. must file a Report of Waste Discharge with the appropriate RWQCB, as applicable. Cal. Water Code §§13260; 13264. The RWQCB, after a public hearing, will then respond to the Report of Waste Discharge by imposing appropriate Waste Discharge Requirements (WDRs) (Cal. Water Code §§13263; 13264), or by issuing a Waiver of WDRs with appropriate conditions (Cal. Water Code §13269) to control discharges for the protection of Waters of the State.

The SWRCB and RWQCBs, on a statewide and regional basis, respectively, also have authority to issue, deny, condition, enforce and otherwise administer all CWA section 402 National Pollutant Discharge Elimination System (NPDES) Permits for discharges of pollutants into Waters of the U.S., and section 401 water quality certifications for section 404 permits. 33 U.S.C. §1311; Cal. Water Code §13160; Memorandum of Understanding Regarding Permit and Enforcement Programs Between the State Water Resources Control Board and the Regional Administrator, Region IX, Environmental Protection Agency (effective March 26, 1973) as supplemented by the NPDES Memorandum of Agreement between the U.S. Environmental Protection Agency and the California State Water Resources Control Board (effective June 8, 1989). USACE retains and has not delegated jurisdiction to issue section 404 permits for discharges of fill to Waters of the U.S.

Accordingly, the SWRCB and RWQCBs have, respectively, issued the statewide Construction General NPDES Permit and the MS4 NPDES Permits which constitute both Federal CWA section 402 permits and state Porter-Cologne WDRs under guidance issued by the SWRCB, discharges of fill subject to USACE CWA section 404 permitting are reviewed and protected by the SWRCB by issuance of section 401 water quality certifications, and no additional state law WDRs are required to authorize discharges of fill. Discharges of fill to Waters of the State that are not also Waters of the U.S. are subject to regulation by the SWRCB or appropriate RWQCBs, as applicable. Any project proponent proposing such discharges of fill must submit a report of waste discharges along with USACE jurisdictional disclaimers, and prior to placing such fill, must either obtain coverage for such discharges under:

(i) the SWRCB's Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction, Order No. 2004-004-DWQ,

(ii) individual WDRs, or

(iii) a conditional waiver of WDRs. Guidance for Regulation of Discharges to "Isolated" Waters (Celeste Cantu, Executive Director June 25, 2004).

The SWRCB has adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State, which became effective on May 28, 2020 (SWRCB 2019). The Procedures define an area as a wetland as follows: an area is a wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation. The Procedures consider natural wetlands, wetlands created by modification of surface Waters of the State, and areas that meet the current or historic definitions of Waters of the U.S., to be Waters of the State (SWRCB 2019). In addition, the Procedures considers artificial wetlands (i.e., wetlands that result from human activity) that meet specific criteria to be Waters of the State (SWRCB 2019). However, contrary to the USACE wetland definition, the State's wetland delineation also protects non-vegetated wetlands. This definition does not affect the meaning of Waters of the State as it pertains to SWRCB/RWQCB jurisdiction pursuant to the Porter-Cologne Act, nor does it modify the current authorities of the SWRCB/RWQCB to protect water quality.

California Fish and Game Code Sections 1600–1616

Pursuant to sections 1600–1616 of the California Fish and Game Code, the CDFW regulates all substantial diversions, obstructions, or changes to the natural flow or the bed, channel, or bank of any river, stream, or lake, which provides habitat and supports fish or wildlife. CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation" (CCR, Title 14, Division 1, Subdivision 1, Chapter 1, section 1.72). "Bank" means the slope or elevation of land that bounds the bed of the stream in a permanent or longstanding way, and that confines the stream water up to its highest level. "Lake" includes "natural lakes or man-made reservoirs."

Rivers, streams, lakes, and riparian vegetation that provide habitat for fish and wildlife species are subject to jurisdiction by the CDFW under sections 1600–1616 of the California Fish and Game Code. Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Section 2785(e) defines "riparian habitat" as lands that contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source. CDFW regulates the bed, bank to bank, as well as associated riparian vegetation, and fish and wildlife resources. CDFW has interpreted jurisdictional boundaries to be defined by the tops of stream banks (i.e., the limit of stream influence) and/or the limit of the canopy of riparian vegetation (outer drip line) that is hydrologically connected to river, stream, or lake, whichever is greatest. As a result, the area of CDFW jurisdiction is usually greater than the active channel and overlaps and extends beyond the USACE jurisdiction. Isolated wetlands not associated with a river, stream or lake are not protected under sections 1600 *et seq.* of the California Fish and Game Code. In addition, CDFW does not have regulatory authority on Tribal Lands.

CDFW jurisdiction may also extend to altered or artificial waterways based upon the value of those waterways to fish and wildlife (CDFG ESD 1994), particularly to the extent that such constructed waterways were originally natural waterways.

The Lake and Streambed Alteration Program requires execution of an agreement with CDFW before any activity substantially modifies a river, stream or lake. It is not legal to alter the bed or bank of a stream or lake or their natural water flow without a CDFW Streambed Alteration Agreement. The California Fish and Game Code section 1602 requires an entity to notify CDFW of any proposed activity that may substantially modify a perennial, intermittent, and ephemeral river, stream, or lake in the state. Notification is required by any person, business, state or local government agency, or public utility that proposes an activity that will:

- Substantially divert or obstruct the natural flow of any river, stream or lake.
- Substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake.
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

The notification requirement applies to any work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel. This includes intermittent and ephemeral

streams and washes, and other watercourses with subsurface flows, or drainages with beds and banks that support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife.

Colusa County General Plan

The Conversation Element in the Colusa County General Plan includes the following policies that apply to biological resources:

> ***Policy CON 1-7:*** Conserve and enhance those biological communities that contribute to the County's rich biodiversity including, but not limited to, blue oak woodlands, annual grasslands, mixed chaparral, pine woodlands, wetlands, riparian areas, aquatic habitat, and agricultural lands.
>
> ***Policy CON 1-8:*** Conserve existing native vegetation where possible and integrate existing native vegetation into new development if appropriate.
>
> ***Policy CON 1-11:*** Protect wetlands and riparian habitat areas from encroachment by development to the greatest extend feasible.
>
> ***Policy CON 1-12:*** Require new development to include maintained and managed setbacks and buffers along riparian corridors and adjacent to sensitive habitat.
>
> ***Policy CON 1-13:*** Sensitive habitats include oak woodlands, wetlands, vernal pools, riparian areas, wildlife and fish migration corridors, native plant nursery sites, Waters of the U.S., and other habitats designated by state and federal agencies and laws.
>
> ***Policy CON 1-14:*** Require any proposed project that may affect special-status species, their habitat, or other sensitive habitat to submit a biological resources evaluation as part of the development review process. Evaluations shall be carried out under the direction of the Colusa County Department of Planning and Building and consistent with applicable state and federal guidelines. Additional focused surveys shall be conducted during the appropriate season (e.g., nesting season, flowering season, etc.), if necessary.
>
> ***Policy CON 1-15:*** Require that impacts to wetlands and riparian habitat protected by State or Federal regulations be avoided to the greatest extent feasible. If avoidance is not possible, fully mitigate impacts consistent with applicable local, State and Federal requirements.
>
> ***Policy CON 1-16:*** Require new development projects to incorporate measures that eliminate or avoid direct impacts to lakes, reservoirs, rivers, creeks, streams, wetlands, and other waterways to the greatest extent feasible. Measures may include, but are not limited to, appropriate setbacks or the implementation of best management practices approved by the Department of Planning and Building.
>
> ***Policy CON 1-17:*** All discretionary public and private projects that identify special-status species or sensitive habitats in biological resources evaluation shall avoid impacts to special-status species and their habitat to the maximum extent feasible. Where impacts cannot be avoided, projects shall include the implementation of site-specific or project-specific effective mitigation strategies developed by a qualified professional in consultation with state or federal resource agencies with jurisdiction (if applicable) including, but not limited to, the following strategies:

a. Preservation of habitat and connectivity of adequate size, quality, and configuration to support the special-status species. Connectivity shall be determined based on the specifics of the species' needs.

b. Project design measures, such as clustering of structures or locating project features to avoid known locations of special-status species and/or sensitive habitats.

c. Provision of supplemental planting and maintenance of grasses, shrubs, and trees of similar quality and quantity to provide adequate vegetation cover to enhance water quality, minimize sedimentation and soil transport, and provide adequate shelter and food for wildlife.

d. Protection for habitat and the known locations of special-status species through adequate buffering or other means.

e. Provisions of replacement habitat of like quantity and quality on- or off-site for special-status species.

f. Enhancement of existing special status species habitat values through restoration and replanting of native plant species.

g. Provision of temporary or permanent buffers of adequate size (based on the specifics of the special status species) to avoid nest abandonment by nesting migratory birds and raptors associated with construction and site development activities.

h. Incorporation of the provisions or demonstration of compliance with applicable recovery plans for federally listed species.

i. Monitoring of construction activities by a qualified biologist to avoid impacts to on-site special status species.

Policy CON 1-18: Where sensitive biological habitats have been identified on or immediately adjacent to a project site, the following measures shall be implemented.

a. Preconstruction surveys for species listed under the State or Federal Endangered Species Acts, or species identified as special status by the resource agencies, shall be conducted by a qualified biologist;

b. Construction barrier fencing shall be installed around sensitive resources and areas identified for avoidance or protection; and

c. Employees shall be trained by a qualified biologist to identify and avoid protected species and habitat.

Policy CON 1-23: Protect and enhance streams, channels, seasonal and permanent marshland, wetlands, sloughs, riparian habitat and vernal pools through sound land use planning, community design, and site planning.

Policy CON 1-24: If a proposed project may result in impacts to wetlands or other Waters of the U.S., require the project proponent to consult with the appropriate regulatory agency and implement all applicable permit requirements as a condition of project approval.

Policy CON 1-27: Encourage agricultural landowners to improve on-site storm water retention features and implement feasible Best Management Practices (BMPs) to reduce site runoff and provide for natural removal of water pollutants.

Policy CON 1-33: Require new development and expansion of existing uses to incorporate best management practices for water use and water conservation measures.

4.4.3 Methodology

The following summarizes the literature and field survey methods used for evaluating the biological resources for the Janus Solar Project. See Appendix E for additional details on the methodology.

Literature Review

Prior to the field surveys, biologists reviewed relevant literature, databases, agency web sites, reports, management plans, Geographic Information System data, maps, and aerial imagery. The following sources were reviewed:

- CDFW California Natural Diversity Database data
- U.S. Geological Service topographic maps
- CNPS Inventory of Rare and Endangered Plants data
- Satellite and aerial imagery from Google Earth
- NWI data
- United States Department of Agriculture Natural Resources Conservation Service data
- *Janus Solar Project—Foothill Agriculture Site Critical Issues Analysis Memo* (Stantec 2018)

Field Surveys

The following types of general and focused biological surveys were conducted at the proposed Project site in 2019, 2020, and 2021:

- Vegetation and habitat mapping
- Spring rare plant survey
- Summer rare plant survey
- Raptor nest surveys
- Swainson's hawk breeding season surveys and habitat assessment
- Protocol BUOW burrow survey
- Protocol breeding season BUOW survey
- Protocol winter season BUOW survey
- Jurisdictional delineation

Impact Analysis

Biological resources either may be "directly" or "indirectly" impacted by a project (defined by State CEQA Guidelines section 15358):

- *Direct impact*: impacts which are caused by the project and occur at the same time and place. Any alteration, disturbance or destruction of biological resources that could result from project-related activities is considered a direct impact.
- *Indirect impact*: impacts which are caused by the project and are later in time or farther removed in distance but are still reasonably foreseeable. Examples include growth-inducing impacts and other impacts related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Impacts either may be “permanent” or “temporary” in nature:

- *Temporary impacts (short-term)*: impacts considered as having reversible impacts on biological resources can be viewed as temporary, such as construction noise.
- *Permanent impacts (long-term)*: impacts that result in the irreversible removal of biological resources are considered permanent, such as development.

4.4.4 Thresholds of Significance

A project would result in significant impacts to biological resources if it would:

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

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

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

d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or*

e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

4.4.5 Impacts Analysis

IMPACT 4.4-1: Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service? **(Less than Significant Impact with Mitigation Incorporated)**

To avoid environmental constraints, approximately 768 acres of the 1,024-acre site would be used for the Project (Figure 4.4-1). Permanent impacts would include construction of the solar energy generating facility, energy storage system, access roads, and perimeter fences. The gen-tie line

would not impact areas of natural habitat since it would occur within an existing road easement. The majority of these acres would be permanently converted to solar panel arrays and support infrastructure. Most of the development would occur in agricultural fields and non-native grassland and herbaceous habitats that are disturbed by cattle grazing. Not all areas within the Project boundary would be impacted; these areas would remain as the current habitat type and no disturbance would occur (Figure 4.4-1). Impacts to specific biological resources and mitigation measures are discussed in the sections below.

Special-Status Plants

The vast majority of the site provides low quality habitat for special-status plant species due to high levels of grazing and non-native plant cover. One special-status plant species, Parry's rough tarplant (CNPS Rank 4.2), was found within small areas on the Project site during field surveys (Figure 4.4-2). With implementation of **Mitigation Measure BIO-1**, all locations of Parry's rough tarplant would be flagged in the field for avoidance during construction. If these locations cannot be avoided, a seed collection and replanting plan would be prepared to reduce impacts. Any herbicides used on-site would be applied in accordance with all regulations by a state-licensed pesticide applicator to eliminate the potential for drift effects. During Project operations, no ground disturbance of new areas would occur and locations of Parry's rough tarplant would continue to be avoided. Furthermore, all on-site vehicle traffic and personnel would be confined to designated work areas and transportation routes. Therefore, the Project would have no substantial adverse effects on special-status plants, and the impact would be less than significant with mitigation incorporated.

Burrowing Owl

BUOWs were observed on the Project site in late 2020 and early 2021 (Figure 4.4-3). Project construction, including ground disturbance, noise, vehicle traffic, and on-site personnel, may impact this species if they are present on or near the site during construction. These impacts could include direct mortality, loss of burrow or foraging habitat, behavioral disturbance, and nest failure. All construction lighting would be shielded, directed downward, and temporary to minimize potential impacts. With implementation of **Mitigation Measures BIO-1** and **BIO-2**, including the preparation of a CDFW-approved mitigation plan if BUOWs are detected during the pre-construction survey, construction impacts would be reduced to a less than significant level and the Project would have no substantial adverse effects on BUOW.

Project operations and maintenance are unlikely to impact BUOW since vehicle traffic and on-site personnel would be minimal, and heavy equipment would be infrequently used. Furthermore, infrastructure areas where the activities would occur are unlikely to support BUOW. The minor increase in vehicle traffic and on-site personnel would be temporary and normal wildlife behavior is expected to resume after the disturbance. All Project security lighting would be shielded, directed downward, and equipped with switches or motion detectors (rather than remaining on from dusk to dawn) to minimize potential impacts. If vegetation removal is required, **Mitigation Measure BIO-1** would be implemented to protect BUOW. Therefore, Project operations and maintenance would have no substantial adverse effects on this species, and the impact would be less than significant with mitigation incorporated.

Swainson's Hawk and Other Raptors

Swainson's hawk were observed on the Project site and one Swainson's hawk nest was observed a few miles from the site during field surveys in 2020 (Figure 4.4-4). Additional nests were also observed within 10 miles of the site in 2021 (Estep Environmental Consulting 2021). Other special-status raptors observed on the Project site include northern harrier, merlin, and prairie falcon, however, these species are unlikely to nest on the site. Project construction would occur on Swainson's hawk and raptor foraging habitat on the Project site, including the *Aegilops triuncialis* Provisional Herbaceous Semi-Natural Alliance, *Amsinckia menziesii – Achyrachaena mollis* Herbaceous Alliance, and planted common wheat fields habitats It is estimated that up to 580 acres of Swainson's hawk foraging habitat would be affected by the Project (Estep Environmental Consulting 2021). It should be noted that solar panel array areas may continue to support a variety of raptor prey species and provide some foraging opportunities for raptors (Estep Environmental Consulting 2021). Overall, the Project would impact approximately 1.8 percent of the total suitable Swainson's hawk foraging habitat in a 10-mile radius around the Project site (Estep Environmental Consulting 2021). However, there are no Swainson's hawk nests within or near the foothill grassland transition area of the Project site, and although suitable for foraging (foraging by Swainson's hawks was observed on the site in 2020), use of the site by Swainson's hawks is likely minimal compared with the irrigated croplands in the interior of the valley (Estep Environmental Consulting 2021). The Project would not reduce the number or restrict the range of the species (Estep Environmental Consulting 2021). Therefore, the construction impact to foraging habitat would not result in substantial adverse effects on the species.

Ground disturbance, noise, vehicle traffic, and on-site personnel may also disturb these species if nesting on or near the Project site during construction. However, implementation of **Mitigation Measures BIO-1**, **BIO-2**, and **BIO-3** would reduce construction impacts to Swainson's hawk and other raptors to a less than significant level and ensure that the Project would have no substantial adverse effects on these species.

Project operations and maintenance are unlikely to impact Swainson's hawk and other raptors since vehicle traffic and on-site personnel would be minimal, and heavy equipment would be infrequently used. Furthermore, infrastructure areas where the activities would occur are unlikely to support nesting raptors. The minor increase in vehicle traffic and on-site personnel would be temporary and normal wildlife behavior is expected to resume after the disturbance. In addition, new transmission and communication lines and structures would be constructed in accordance with the most recent Avian Power Line Interaction Committee guidance to reduce the potential for bird injury and mortality from collisions and electrocution. If vegetation removal is required, **Mitigation Measures BIO-1** and **BIO-3** would be implemented to protect nests. Therefore, Project operations and maintenance would have no substantial adverse effects on these species, and the impact would be less than significant with mitigation incorporated.

Special-status Migratory Birds

Special-status migratory birds known to occur on the Project site include loggerhead shrike and white-faced ibis. The Project site provides only limited potential nesting sites (i.e., trees and shrubs) for loggerhead shrike, and white-faced ibis would not nest on the site because preferred nesting sites do not occur, and the species no longer breeds regularly in California (California Department of Fish and Game 2005). Construction of the proposed Project would develop potential foraging habitat that could be used by special-status birds. However, as described above

for raptors, this represents a very small percentage of the total suitable foraging habitat available in the region and would result in an insignificant impact. In addition, ground disturbance, noise, vehicle traffic, and on-site personnel during construction have the potential to disturb nesting birds in and near the Project site. However, implementation of **Mitigation Measures BIO-2** and **BIO-3** would reduce construction impacts to a less than significant level and ensure that the Project would have no substantial adverse effects on special-status migratory birds.

Project operations and maintenance are unlikely to impact special-status migratory birds since vehicle traffic and on-site personnel would be minimal, and heavy equipment would be infrequently used. Furthermore, infrastructure areas where the activities would occur are unlikely to support nesting birds. The minor increase in vehicle traffic and on-site personnel would be temporary and normal wildlife behavior is expected to resume after the disturbance. In addition, if vegetation removal is required, **Mitigation Measure BIO-3** would be implemented to protect nests.

New transmission and communications lines and structures would be constructed in accordance with the most recent Avian Power Line Interaction Committee guidance to reduce the potential for bird injury and mortality from collisions and electrocution. Migratory birds may be affected by collisions with solar panel infrastructure. The polarization signature of the Project's PV panels could attract migratory bird species to the Project site where they might mistake the reflective panels for a water body (Roth 2016).

Limited monitoring data are available for avian collision with solar panels. A USFWS summary of avian solar facility mortalities from 2012 to 2016 by Dietsch (2016) cited 3,545 bird deaths at seven Southern California solar farms, including four listed and one CDFW Fully Protected species (Yuma Ridgway's rail, willow flycatcher, yellow-billed cuckoo, bank swallow, and peregrine falcon). Yuma Ridgway's rail is federally listed endangered and state-listed threatened, willow flycatcher is state-listed endangered, yellow-billed cuckoo is federally listed threatened and state-listed endangered, bank swallow is state-listed threatened, and peregrine falcon is federally and state delisted but is also CDFW Fully Protected. Walston et al. (2014) examined a 250 MW PV project (the California Valley Solar Ranch in San Luis Obispo County), where the mortality rate from the project was approximately 0.5 birds per MW per year. Western EcoSystems Technology, Inc. (WEST) (2014a, 2014b) examined three California PV facilities (the California Valley Solar Ranch and Topaz in San Luis Obispo County, and Desert Sunlight in Riverside County) and found most deaths were passerines (songbirds), followed by game birds (doves and pigeons). Water birds (mainly grebes and coots) were found at one of the facilities (Desert Sunlight), but not at the other two. Two Ridgway's rail carcasses also were discovered at Desert Sunlight (WEST 2014a, 2014b). WEST's 2018 summary of avian collision monitoring results from 2014 through 2017 for PV solar projects in Riverside County reports all bird fatality rates in the solar arrays was between 0.2 and 2.0 per MW per year (WEST 2018). Based on this rate, bird fatality for this proposed Project (80 MW) would be between 16 to 160 birds per year, however, it should be noted that this Project would occur in Colusa County which may have a different fatality rate than Riverside County. Although data from PV solar array-type facilities indicate instances of avian mortality resulting from collisions, the best available scientific information to date does not indicate a significant risk of substantial avian mortality occurring at facilities such as the Project.

Therefore, for the reasons described above, Project operations and maintenance would have no substantial adverse effects on special-status migratory birds, and the impact would be less than significant with mitigation incorporated.

American Badger

While American badger was not observed during the field surveys and no large underground holes or potential burrows/dens were found in the Project site, culverts of sufficient size, which were found along existing roads within and around the site, can be used by this species for refuge or to pass safely beneath roads. Construction of the proposed Project, including ground disturbance, noise, vehicle traffic, and on-site personnel has the potential to affect American badger if present in or near the construction area. These impacts may result in direct mortality or behavioral disturbance. All construction lighting would be shielded, directed downward, and temporary to minimize disturbance. With implementation of **Mitigation Measures BIO-1** and **BIO-2**, construction impacts would be reduced to a less than significant level and the Project would have no substantial adverse effects on American badger.

Project operations and maintenance are unlikely to impact American badger since vehicle traffic and on-site personnel would be minimal, and heavy equipment would be infrequently used. Furthermore, infrastructure areas where the activities would occur are unlikely to support American badger. The minor increase in vehicle traffic and on-site personnel would be temporary and normal wildlife behavior is expected to resume after the disturbance. All Project security lighting would be shielded, directed downward, and equipped with switches or motion detectors to minimize potential impacts. If vegetation removal is required, **Mitigation Measure BIO-1** would be implemented to protect American badger. Therefore, Project operations and maintenance would have no substantial adverse effects on this species, and the impact would be less than significant with **Mitigation Measures BIO-1**, **BIO-2**, and **BIO-3** incorporated.

IMPACT 4.4-2: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? **(No Impact)**

No sensitive natural community occurs in the Project site. While areas under regulation by the CDFW were found during the jurisdictional delineation of the Project site, these were sparsely vegetated drainages or ponds that do not provide riparian habitat (Figure 4.4-5). Remnant willow riparian habitat that occurs on the Project site is disturbed by grazing and only has sparse native and non-native trees (Figure 4.4-1). All of these areas would be avoided during Project construction, operations, and maintenance activities. With the implementation of **Mitigation Measure BIO-2**, these areas and an appropriate protective buffer would be flagged in the field for avoidance during construction. Therefore, no impact to any riparian habitat or other sensitive natural community would occur.

IMPACT 4.4-3: 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 Impact)**

State and federally protected wetlands occur on the Project site (Table 4.4-3; Figure 4.4-5). The wetlands consisted of distinct portions of a drainage and two depressional ponds. All wetlands would be avoided during Project construction, operations, and maintenance activities. The site

has been designed to follow natural drainage patterns and would avoid hydrological interruption of these wetlands. Site preparation and construction activities would also be performed in accordance with a Stormwater Pollution Prevention Plan or similar plan that incorporates stormwater Best Management Practices to reduce the adverse effects of erosion and sedimentation. With the implementation of **Mitigation Measure BIO-2**, these areas and an appropriate protective buffer would be flagged in the field for avoidance during construction. Therefore, no impact to state or federally protected wetlands would occur.

IMPACT 4.4-4: 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? **(Less than Significant)**

Construction and operation of the proposed Project may impede wildlife movement through areas of the site. The proposed infrastructure including solar arrays and chain-link perimeter fencing, vehicle traffic, and on-site personnel could inhibit the movement of larger or more sensitive wildlife through the Project site. If feasible, wildlife-movement friendly fencing would be used instead of chain-link fencing. The Project site likely provides limited opportunities for habitat continuity or wildlife movement due to existing on-site disturbances such as agriculture, grazing, and cattle fencing. Wildlife that do move through the Project site are likely acclimated to low levels of human activity given the existing grazing and agricultural activities on the site.

All riparian areas/drainages in the Project site that could provide dispersal corridors would be avoided during Project construction and operations and could continue to be used by wildlife. In addition, the ability of wildlife to move through areas surrounding the Project site would not be affected. New transmission and communications lines and structures would be constructed in accordance with the most recent Avian Power Line Interaction Committee guidance to reduce the potential for injury and mortality to migratory birds from collisions and electrocution. No native wildlife nursery sites are known to occur in the Project site. Therefore, the impact due to interference with movement of native fish or wildlife, established native wildlife corridors, or native wildlife nursery sites would be less than significant.

IMPACT 4.4-5: Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? **(Less than Significant with Mitigation Incorporated)**

The County has policies and ordinances protecting biological resources, including Conservation Element Policies 7, 8, 11-18, 23, 24, 27, and 33. However, the Project would not conflict with any local policies or ordinances protecting biological resources because the Project would not impact oak woodlands or oak trees, and would avoid impacts to riparian and wetland habitats. Incorporation of **Mitigation Measures BIO-1**, **BIO-2**, and **BIO-3** would implement pre-construction surveys and minimization and avoidance measures. Therefore, the impact due to conflicts with local policies protecting biological resources would be less than significant with **Mitigation Measures BIO-1**, **BIO-2**, and **BIO-3** incorporated.

4.4.6 Mitigation Measures

The following mitigation measures are recommended to reduce significant impacts to biological resources.

BIO-1: Protection of Special-Status Species

Parry's Rough Tarplant

A pre-construction survey for Parry's rough tarplant shall be conducted in work areas with potential habitat no more than 14 days prior to construction activities during the blooming period (May to October). If Parry's rough tarplant populations are located outside of the Project construction footprint (including staging areas), a qualified biologist shall flag an appropriate zone to completely avoid impacts to any individuals. If necessary, based on the timing of the construction work, populations may also be flagged based on previous survey data of the population extents.

If Parry's rough tarplant populations cannot be avoided, a qualified biologist shall prepare a seed collection and replanting plan to reduce impacts to the identified special-status plant populations. Temporary impacts (impacts in areas that would be restored to natural conditions) may be mitigated by salvaging the first 6 inches of topsoil during ground disturbance, storing on-site and protecting the soil from weed seed dispersal, and then returning the soil horizon to its original profile to keep seeds at the appropriate soil depth. Permanent impacts (impacts in areas that would not be restored to natural conditions) may be mitigated by enhancing other Parry's rough tarplant habitat within or outside the Project site. Topsoil would not be salvaged in the case of permanent impacts, and other habitat enhancement methods would be used, such as seed collection and propagation, in other non-impacted locations.

Burrowing Owl

The Project owner shall have pre-construction surveys performed no less than 14 days prior to the initiation of equipment staging or ground-disturbing activities (e.g., vegetation clearing or grading) and within 24 hours prior to these activities. A qualified biologist shall conduct pre-construction surveys on the site and 150-meters around the site (access permitting) in areas with suitable burrowing habitat to locate any active breeding or wintering BUOW burrows and to check known burrows. Areas that have been plowed within 12 months prior to the start of ground-disturbing activities are not considered suitable habitat. The survey methodology shall be consistent with the methods outlined in the CDFW (2012) *Staff Report on Burrowing Owl Mitigation* and shall consist of walking parallel transects 23 to 66 feet (7 to 20 meters) apart, noting any potential burrows with fresh BUOW sign or presence of BUOWs, and visiting potential burrows during the timeframe described in the protocol. If the work activity halts for a period of 7 days or more, the survey would need to be conducted again prior to the continuation of site activities. Copies of the survey results shall be submitted to CDFW and the Colusa County Planning Department.

- If BUOWs are detected on the Project site or within 150 meters during the pre-construction survey, a Project-specific mitigation plan shall be prepared for CDFW review and approval and implemented to protect BUOWs and their nest sites. No ground-disturbing activities, such as vegetation clearance, grading, or equipment staging shall be permitted within 330 feet from an active burrow during the breeding season (February 1 to August 31), unless otherwise approved by a qualified biologist. During the non-breeding (winter) season (September 1 to January 31), no ground-disturbing work or equipment staging shall be permitted within a buffer of 165 feet from the active burrow. Depending on the level of disturbance, a smaller buffer may be

established by a qualified biologist based on the visibility and sensitivity responses of each individual BUOW or pairs in consultation with CDFW.

- If burrow avoidance is infeasible during the non-breeding season or during the breeding season where resident BUOWs have not yet begun egg laying or incubation or where the juveniles are foraging independently and capable of independent survival, a qualified biologist shall implement a passive relocation program in accordance with the CDFW (2012) *Staff Report on Burrowing Owl Mitigation*. If passive relocation is anticipated due to on-site BUOW populations, a Burrowing Owl Exclusion Plan in accordance with CDFW (2012) *Staff Report on Burrowing Owl Mitigation* would be included in the Project-specific mitigation plan prior to passive relocation activities.

Swainson's Hawk

If construction (i.e., equipment staging, vegetation removal, or ground disturbance) is scheduled to commence outside of the Swainson's hawk nesting season (September 16 to February 28), no preconstruction surveys or additional measures are required for Swainson's hawk. During the breeding season (March 1 to September 15), a qualified biologist shall conduct preconstruction surveys of all potential nesting habitat within the Project site. The survey shall focus on potential nest sites within a 0.5-mile buffer around the site in areas where access to neighboring properties is available or visible using a spotting scope or binoculars. Surveys shall be conducted in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000) and occur no more than 10 days prior to construction activities.

Surveys need not be conducted for the entire Project site at one time; they may be phased so that surveys occur shortly before a portion of the Project site is disturbed. The surveying biologist must be qualified to determine the status and stage of nesting by Swainson's hawk without causing intrusive disturbance. If active Swainson's hawk nests are found, a 0.5-mile buffer shall be established by a qualified biologist around active nests and no construction within the buffer shall be allowed until the biologist has determined that the nest is no longer active (e.g., the nestlings have fledged and are no longer reliant on the nest), adult and juvenile Swainson's hawks have left the area, or the breeding season has ended. Encroachment into the buffer for Swainson's hawk must be authorized by the CDFW.

American Badger

A pre-construction survey for the American badger shall occur during the burrowing owl surveys. Any active American badger dens shall be avoided by establishing a minimum 50-foot buffer around the den. No construction activities shall occur within this buffer unless a qualified biologist determines that the den is inactive.

BIO-2: Worker Environmental Awareness Training and Best Management Practices for Biological Resources

During construction, operation and maintenance, and decommissioning of the facility, the Project owner and/or contractor shall implement the following general avoidance and protective measures to protect special-status wildlife species and habitats:

- Prior to and for the duration of construction activities, the Project owner, or its contractor, shall implement a Worker Environmental Awareness Program to train all on-site construction personnel how to recognize and protect biological resources on the Project site. The Worker Environmental Awareness Program training shall include a review of the special-status species and other sensitive biological resources that could exist in the Project area, the locations of sensitive biological resources and their legal status and protections, and measures to be implemented for avoidance of these sensitive resources, highlighting Parry's rough tarplant, burrowing owl, Swainson's hawk, American badger, nesting birds, and protected waters and wetlands.
- The Project owner shall limit the areas of disturbance. Parking areas, new roads, staging, storage, excavation, and disposal site locations shall be confined to the smallest areas possible. Buffers and avoidance areas established for biological resources, as described in **BIO-1** and **BIO-3** above, shall be delineated with stakes and/or flagging prior to construction. Construction-related activities and use of vehicles and equipment shall not occur within protected buffers or avoidance areas.
- Any sensitive habitats, including riparian areas and state and federally protected wetlands, within 50 feet of the Project impact areas shall be flagged in the field by a qualified biologist prior to Project construction. To the extent feasible, the greatest buffer (up to 50 feet) should be flagged around the sensitive habitat. No work will occur in the flagged areas. The avoidance areas will be maintained for the duration of construction activities in the vicinity of these areas.
- To prevent inadvertent entrapment of wildlife during construction, all excavated, steep-walled holes or trenches with a 2-foot or greater depth shall be covered with plywood or similar materials at the close of each working day or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected by on-site workers for trapped animals. If trapped animals are observed, escape ramps or structures shall be installed immediately to allow escape. If a special-status species is trapped, the USFWS and/or CDFW shall be contacted immediately.
- All construction pipes, culverts, or similar structures with a 4-inch or greater diameter that are stored at a construction site for one or more overnight periods shall be covered and/or thoroughly inspected for special-status wildlife or nesting birds before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If an animal is discovered inside a pipe, that section of pipe shall not be moved until a qualified biologist has been consulted and the animal has either moved from the structure on its own accord or until the animal has been captured and relocated by the biologist. No handling of special-status species shall occur without consultation with the applicable agencies (CDFW, USFWS).
- Vehicles and equipment parked on the site during construction shall have the ground beneath the vehicle or equipment inspected for the presence of wildlife prior to moving.
- Vehicular traffic shall use existing routes of travel. Cross country vehicle and equipment use outside of the Project properties shall be prohibited.
- A speed limit of 20 miles per hour shall be enforced within all construction areas.
- A long-term trash abatement program shall be established for construction, operation, and decommissioning and submitted to the County. Trash and food items shall be

contained in closed containers and removed daily to reduce the attractiveness to wildlife such as common raven (*Corvus corax*), coyote (*Canis latrans*), and feral dogs.

- Workers shall be prohibited from bringing pets to the Project site and from feeding wildlife in the vicinity.
- Intentional killing or collection of any wildlife species shall be prohibited.
- Rodenticides shall not be used within the Project site except within buildings and disturbance to mammal burrows shall be avoided and minimized.

BIO-3: Protection of Nesting Birds

If construction (i.e., vegetation removal or ground disturbance) is scheduled to commence outside of the bird nesting season (September 1 to January 31), no preconstruction surveys or additional measures are required for nesting birds, including raptors. During the nesting bird breeding season (February 1 to August 31), a qualified biologist shall conduct preconstruction surveys of all potential nesting habitat within the Project site where construction is planned. The survey shall focus on potential nest sites within a 500-foot buffer around the site in areas where access to neighboring properties is available or visible using a spotting scope or binoculars. Surveys shall be conducted no more than 14 days prior to construction activities. If the work activity halts for a period of 7 days or more, the survey would need to be conducted again prior to the continuation of site activities.

Surveys need not be conducted for the entire Project site at one time; they may be phased so that surveys occur shortly before a portion of the Project site is disturbed. The surveying biologist must be qualified to determine the status and stage of nesting by migratory birds and all locally breeding raptor species without causing intrusive disturbance. If active nests are found, a suitable buffer (e.g., 200 feet for non-listed raptors, 50 feet for non-listed birds) shall be established by a qualified biologist around active nests and no construction within the buffer shall be allowed until the biologist has determined that the nest is no longer active (e.g., the nestlings have fledged and are no longer reliant on the nest) or the breeding season has ended. Encroachment into the buffer may occur at the discretion of a qualified biologist for non-listed species.

4.4.7 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission line that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements would be made within the existing Cortina Substation footprint.

Through the implementation of **Mitigation Measures BIO-1, BIO-2**, and **BIO-3,** these improvements would not have a substantial adverse effect on any listed, candidate or special status species that is protected under any regional plans, polices, or regulations. Nor would these improvements have an adverse impact on any sensitive natural communities identified in any local or regional plan, policies, or regulations. The PG&E improvements would not have an adverse effect on protected wetlands. No resident or migratory wildlife species or established

wildlife corridors would be affected by the PG&E improvements. In addition, these improvements would not conflict with any local policies or ordinances protecting biological resources with the implementation of **Mitigation Measures BIO-1, BIO-2**, and **BIO-3.** Therefore, no additional mitigation measures would be required.

4.4.8 Cumulative Impacts

Cumulative effects of multiple projects are caused by the incremental impact of a proposed project in combination with the impacts of other closely related past, present, and reasonably foreseeable probable future projects. The ongoing impacts of past projects are reflected in the existing environmental setting. In this context, the cumulative effects of the Project in combination with the incremental impacts of present and reasonably foreseeable probable future projects in the cumulative scenario are analyzed. For Biological Resources, the geographic scope of the cumulative analysis includes the regional population or extent of the species, community, or corridor affected, or the extent of the local watershed in the case of impacts to wetlands. The list of projects considered for cumulative analysis is provided in Chapter 2.

As discussed above, there would be no impact with respect to sensitive natural communities, including riparian areas, or federal or state jurisdictional wetlands. Therefore, the Project would not cause or contribute to any significant cumulative effect to these resources.

Project impacts to Parry's rough tarplant after the implementation of recommended mitigation measures would be less than significant. No identified cumulative project in the vicinity of the site has a known population of this plant on-site. In addition, the acres of potential habitat for this species that would be impacted by the proposed Project and the identified cumulative projects would be a small fraction of the total potential habitat in the Central Valley. Therefore, the Project would contribute a less than significant amount to a cumulative impact on this species and impacts to the species would not be cumulatively considerable.

Project impacts to BUOW after the implementation of recommended mitigation measures would be less than significant. The cumulative projects may result in impacts to this species, primarily associated with the loss of potential nesting and foraging habitat. For example, the Descendant Ranch Solar Project would develop a site of approximately 2,552 acres in size, some of which likely provides potential habitat for BUOW. However, the Central Valley offers substantial amounts of suitable nesting and foraging habitat for this species, and the area affected by the identified cumulative projects does not represent a significant portion of remaining suitable nesting and foraging habitat within the Central Valley. Therefore, the incremental impacts of the Project, in combination with the incremental impacts of other past, present, and reasonably foreseeable future projects is not expected to cause a significant cumulative effect on BUOW.

Project impacts to Swainson's hawk and other raptors after implementation of recommended mitigation measures would be less than significant. Mitigation measures would protect raptor and other bird nests from disturbance during construction, and loss of foraging habitat is less than significant without mitigation required. The identified cumulative solar project (Descendant Ranch) would also have the potential to impact suitable nesting and foraging habitat for Swainson's hawk and other raptors since approximately 2,552 acres of land would be converted to a solar facility. However, the cumulative solar project is outside of the Project's 10-mile radius, and the Project, in combination with all identified cumulative projects, would not substantially affect habitat for

Swainson's hawk and other raptors relative to the total available habitat in the Central Valley. In addition, new Project overhead powerlines and associated structures would be designed in accordance with the current Avian Power Line Interaction Committee design standards (including use of avian-safe line designs, and installation of devices to make powerlines visible to birds) to reduce the potential for bird injury and mortality from collisions and electrocution, and it is anticipated that the cumulative Projects would also follow similar guidance in areas of potential habitat. Therefore, the Project would not result in a cumulatively considerable impact to Swainson's hawk or other raptors .

Project impacts to special-status migratory birds would be less than significant with mitigation. This proposed Project in combination with the identified cumulative projects would not substantially affect habitat for migratory birds relative to the total available habitat in the Central Valley. The solar facility listed as a cumulative project (NextEra Descendant Ranch) would have the potential to cause impacts to special-status birds, including injury and mortality associated with PV panel collisions. Available data suggest that injury to and mortality of birds may occur from collision with PV panels at solar facilities. The identified cumulative solar project would increase the area of PV collision hazards that could injure or kill birds, would also include new power lines that have the potential to cause injury or mortality from collision or electrocution, and these effects are likely cumulative with this proposed Project. However, this proposed Project includes the commitment to adhere to current Avian Power Line Interaction Committee design standards as described above, which would reduce the potential for bird injury and mortality from collisions and electrocution. Therefore, the incremental effects of the Project on overall bird fatality from collision or electrocution risk in the Central Valley would not be cumulatively considerable.

Project impacts to American badger would be less than significant with mitigation. The cumulative projects may result in impacts to this species, primarily associated with the loss of potential habitat. However, the Central Valley offers substantial amounts of suitable habitat for this species, and the area affected by the identified cumulative projects does not represent a significant portion of remaining suitable habitat within the Central Valley. In addition, this proposed Project would design construction and security lighting to avoid potential impacts (e.g., shielded, directed downward) to nocturnal species such as the American badger. Therefore, the incremental impacts of the Project, in combination with the incremental impacts of other past, present, and reasonably foreseeable future projects is not expected to cause a significant cumulative effect on American badger.

Project impacts to movement of wildlife and established native wildlife corridors would be less than significant and no native wildlife nursery sites are known to occur on the Project site. The proposed Project, in combination with the identified cumulative projects, would not impede the overall ability of wildlife to move through the region, and the total area that would be developed represents a small fraction of land in the Central Valley that could be used for wildlife movement. Therefore, the incremental impacts of the Project, in combination with the incremental impacts of other past, present, and reasonably foreseeable future projects is not expected to cause a significant cumulative effect on this resource.

4.4.9 References

California Department of Fish and Game, Environmental Services Division (CDFG-ESD). 1994. A Field Guide to Lake and Streambed Alteration Agreements Sections 1600-1607, California Fish and Game Code.

California Department of Fish and Game. 2005. *Life History Account for White-faced ibis (Plegadis chihi).* California Wildlife Habitat Relationships System. February

California Department of Fish and Wildlife (CDFW). 2012. Staff Report on Burrowing Owl Mitigation.

CDFW. 2021. Swainson's Hawk in California. https://wildlife.ca.gov/Conservation/Birds/Swainson-Hawks. Accessed May 2021

California Invasive Plant Council (Cal-IPC). 2021a. *Aegilops triuncialis*. https://www.cal-ipc.org/plants/profile/aegilops-triuncialis-profile/. Accessed May 2021.

Cal-IPC. 2021b. *Centaurea solstitialis*. https://www.cal-ipc.org/plants/profile/centaurea-solstitialis-profile/. Accessed May 2021.

Cal-IPC. 2021c. Definition of Invasive Plants. https://www.cal-ipc.org/plants/impact/. Accessed May 2021.

CalRice. 2021. Species in Focus: White-Faced Ibis *Plegadis chihi*. https://calrice.org/pdf/publications/species-in-focus/Ibis.pdf. Accessed May 2021

Dietsch, T. 2016. Update on Solar-Avian Interactions in Southern California. http://blmsolar.anl.gov/program/avian-solar/docs/Avian-Solar_CWG_May_2016_Workshop_Slides.pdf. Accessed July 2021

Estep Environmental Consulting 2021. The Distribution, Abundance, and Habitat Associations of Nesting Swainson's Hawks Buteo swainsoni in the Vicinity of the Proposed Janus Solar Project.

Humple, D., 2008. "Loggerhead Shrike (*Lanius ludovicianus*)." https://www.wildlife.ca.gov/Conservation/SSC/Birds. Accessed July 2021

Jepson Flora Project (eds.). 2020. Jepson eFlora. Website: http://ucjeps.berkeley.edu/IJM.html. Accessed July 2021.

Roth, S. 2016. How many birds are killed by solar farms? https://www.desertsun.com/story/tech/science/energy/2016/08/17/how-many-birds-killed-solar-farms/88868372/. Accessed July 2021.

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California.

Stantec. 2018. Janus Solar Project—Foothill Agriculture Site Critical Issues Analysis Memo.

Swainson's Hawk Technical Advisory Committee. 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley.

SWRCB. 2019. State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State.

Tetra Tech. 2020. Habitat Characterization Report, Proposed Janus Solar Project, Colusa County, California.

Tetra Tech. 2021a. Biological Survey Report. Janus Solar Project. Colusa County, California.

Tetra Tech. 2021b. Burrowing Owl Survey Report. Janus Solar Project. Colusa County, California.

Tetra Tech. 2021c. Jurisdictional Delineation Report. Janus Solar Project. Colusa County, California.

The Cornell Lab. 2019. All About Birds. https://www.allaboutbirds.org/guide. Accessed May 2021.

Walston Jr., L.J., K.E. Rollins, K.E. LaGory, K.P. Smith, S.A. Meyers. 2016. A preliminary assessment of avian mortality at utility-scale solar energy facilities in the United States. Renewable Energy v. 92, p. 405-414. https://doi.org/10.1016/j.renene.2016.02.041.

Western EcoSystems Technology, Inc. (WEST). 2014a. Sources of Avian Mortality and Risk Factors at Three Photovoltaic Solar Facilities.

WEST. 2014b. Background Avian Mortality at Solar and Wind Facilities.

WEST. 2018. Summary of Recent Findings on Avian Collisions.

Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds., 1990. California's Wildlife. Vol. II. Birds. Sacramento, California: California Department of Fish and Game. https://www.wildlife.ca.gov/data/cwhr/life-history-and-range. Accessed May 2021

4.5 CULTURAL RESOURCES

This section identifies and evaluates issues related to cultural resources in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received scoping comments relating to Cultural Resources from the California Native American Heritage Commission (NAHC), and those comments have been incorporated into the Draft Environmental Impact Report (EIR).

This analysis is based in part on the Project-specific Cultural Resources Phase I Survey Report prepared by Tetra Tech in July 2021. Respecting the culturally sensitive nature of the information included, the Phase I Survey Report is not included as an appendix to this analysis. Nonetheless, the preparers of this Draft EIR independently reviewed this report and other materials prepared by or on behalf of the Applicant and determined them to be suitable for reliance on (in combination with other materials included in the formal record) in the preparation of this Draft EIR. The cultural evaluations completed by Tetra Tech were conducted in compliance with California Environmental Quality Act (CEQA) to identify cultural resources, including (but not limited to) archaeological, historic built architectural, and Native American resources within the Project site (or area) and transmission line corridor.

4.5.1 Existing Conditions

4.5.1.1 Regional and Local Setting

The Project is within the northwestern Sacramento Valley, which is part of the Great Central Valley Geomorphic Province (Beck and Haase 1974). The province is comprised of a large northwest trending alluvial plain situated between the Coast Ranges to the west and the Sierra Nevada Range to the east. The Grand Central Valley encompasses both the Sacramento Valley and San Joaquin Valley which are drained by the Sacramento River to the north and the San Joaquin River to the south that converges at San Francisco Bay. The topography of the Project is slightly flat within, with undulating low foothills. A geographic feature, Bunker Hill, is located within the central portion of the Project. The elevation across the Project ranges from 240 to 328 feet above median sea level. Salt Creek is located near the southern Project boundary and an east to west trending ephemeral drainage (possible a tributary of Spring Creek) crosses the southwest portion of the Project site. Sutter Buttes, which is a defunct volcano active around 1.4 to 1.6 million years ago, is located approximately 23 miles northeast of the Project (Alt and Hyndman 2016:259). The Project is roughly 12 miles west of the Sacramento River and is within the Colusa Basin Watershed which is part of the Sacramento National Wildlife Refuges Complex.

The Project site is comprised of recent Holocene alluvial fan and basin deposits (and ranges from 0 to 200 feet in depth) within the flat areas, and Pliocene deposits of the Tehama Formation within the hilly higher elevation areas (Rich 1971). The Tehama Formation is comprised of interbraided, noncontiguous layers of metamorphic pale green, gray, and tan sandstone siltstone, and clay with lenses of gravel (pebble and cobble) (De Novo Planning Group 2010; Helley and Harwood 1985; Rich 1971). The Tehama Formation is exposed in some areas along the Coast Range foothills within the western portion of the Sacramento Valley and extends to depths of approximately 1,700 feet near the central portion of the Sacramento Valley (De Novo Planning Group 2010). The Tehama Formation is overlain by the younger alluvium in flat areas of the valley. According to the

United States Department of Agriculture Web Soil Survey website (2020) soils across the Project site include avar clay, corning clay loam, Clear Lake clay, and corval.

Currently, vegetation in the Project site consists primarily of nonnative species and agricultural fields. Surrounding areas are agricultural fields and an undeveloped open space. Prior to water diversions in the nineteenth century for agricultural use, and the introduction of nonnative species, the Central Valley basin contained a mosaic of biological diversity that was supported by climatic and hydrological conditions conducive to abundant resource availability and subsistence procurement by aboriginal populations (e.g., Patwin; Preston 1990). Before historic alterations to the landscape occurred, the Sacramento Valley was characterized by extensive seasonal wetlands/marches, riverine environments, and alkali basins along active floodplains. Various vegetative communities in the northern Central Valley included bunch grass prairies, upland oak-grass savannas, alkali basins, seasonal wetlands, freshwater marshlands and sloughs, and riparian forests along rivers and drainages.

4.5.1.2 Cultural Context

Pre-Contact

The prehistory of the Central Valley is defined by different temporal periods and cultural complexes based on cross-dating of distinct artifact types, cultural patterns, and radiocarbon dates, if available. There is no single cultural historical framework that encompasses the entire prehistoric record of the Central Valley (Rosenthal et al. 2007). Several key archaeologists have contributed to the development of the chronological framework for the Central Valley such as Fredrickson (1973, 1974, 1994), Bennyhoff (1994), Rosenthal et al. (2007), and others. The generalized cultural sequence collaborated by Rosenthal et al. (2007) includes the Paleoindian Period (13,500–10,500 calibrated Before Present [cal BP]), Lower Archaic Period (10,500–7,500 cal BP), Middle Archaic Period (7,500–2,500 cal BP), Upper Archaic Period (2,500 cal BP–calibrated Anno Domini [cal AD] 1000), and Emergent Period (cal AD 1000–Historic).

Paleoindian Period (13,500 BP to 10,500 cal B.P.)

During the Holocene, periods episodes of erosion and deposition altered, buried, and/or removed the Late Pleistocene landscape (Rosenthal et al., 2007). Evidence of this period comes from scattered surface locations in the southern portion of the Great Valley basin. The earliest known human presence in the region is recorded in Lake County, near Clear Lake, at the Borax Lake Site (CA-LAK-36) with an assemblage that yielded fluted projectile points; several in the San Joaquin Valley that includes the Witt site (CA-KIN-32), located on the remnant south-southwestern shoreline of Tulare Lake; and one possible fluted point in the Sacramento Valley. During this period, hunters and gatherers crossed very large subsistence areas with extensive foraging ranges (Jones et al. 2003). This is supported by obsidian tracing and dating of projectile points from the Witt site. This evidence indicates that wide ranging expeditions to distant areas were made for trade or direct procurement of obsidian sources from Napa Valley and those closer to Tulare Lake but still representing rather lengthy forays east of the Sierra Nevada. During this period, foragers seem to have operated in small mobile groups with low population densities.

Lower Archaic Period (10,500 to 7,500 cal BP)

The environment at the end of the Pleistocene was significantly altered by climate change, which facilitated the production of alluvial fans and flood plains (Rosenthal et al. 2007). The Lower Archaic Period is characterized by isolated finds of stemmed points (like Borax Lake, Lake

Mojave, Siler Lake, and Pinto wide stem types), stone crescents, and other distinctive, formalized, flaked stone artifacts (Rosenthal et al. 2007). Such artifacts were found in the Sacramento Valley as an isolated crescent on an ancient alluvial fan, and further south in the Central Valley at the Buena Vista Lake Site (CA-KER-116; Fredrickson and Grossman 1977), and the shorelines of Tulare Lake at the Witt site. Faunal remains from the Buena Vista Lake site are limited but diverse, including freshwater fish, waterfowl, freshwater mussels (*Margaritiferid margaritifera*), and artiodactyl bones. In the foothills of the Sierra Nevada and Coast Range, lower archaic sites exhibit milling equipment such as handstones, milling slabs, and various cobble core tools that suggest an increased reliance on seasonal plant resources (Rosenthal et al. 2007).

Middle Archaic Period (7,500 BP to 2,500 cal BP)

The Middle Archaic climate was characterized by warmer and drier conditions facilitating the reduction or complete desiccation of Central Valley lakes. Thus, with sea levels rising, new wetland habitats were developed leading to the formation of the Sacramento and San Joaquin Delta (Atwater and Belknap 1980; Goman and Wells 2000). This period is categorized by projectile points such as notched, stemmed, thick-leaf, and narrow concave base darts, groundstone, pottery, twined basketry, basketry awls, and polished stone plummets (Rosenthal et al. 2007). At this time, the classic Windmiller Pattern burial mounds occur. This pattern represents riverine adaptions that were permanent, year-round, habitation sites (Rosenthal et al. 2007). Paleobotanical studies of the Windmiller Pattern indicate early use of acorns and pine nuts. Faunal remains include large game animals (elk, deer, pronghorn), leporids, waterfowl, small and large fish, and small rodents. The fauna represented indicates the use of marshes, grasslands, and riverine forests of the valley region. The foothill tradition is characterized by flaked and ground stone tool use such as expedient cobble-based pounding, chopping, scraping, and mulling tools, and rock filled hearts and ovens, used for subsistence procurement (Rosenthal et al. 2007). Projectile point types include stemmed, thick leaf, notched, and narrow concave base darts. Sites from this period have been identified in the foothills of Solano, Calaveras, Glen, Mariposa, and Fresno County.

Upper Archaic Period (2,500 cal B.P.—cal A.D. 1000)

During the early portion of this period the environment was cooler and wetter. Populations were characterized by geographically complex sociopolitical organizations as evident from archaeological burial data (e.g., contrasting burial postures), artifact styles, and other items of material culture (Rosenthal et al. 2007:156). Specialized technologies appeared during the Upper Archaic Period such as bone tools and implements and the production of saucer and saddle-shaped shell beads (Olivella) and ornaments (Haliotis), and ceremonial obsidian blades. A large amount of obsidian was obtained from the eastern side of the Sierra Nevada, and lanceolate-shaped bifaces were widely traded (Rosenthal et al. 2007:157). This period was also marked by mortar and pestle use and an increase in plant procurement, specifically acorns (Rosenthal et al. 2007; Wohlgemuth 1996; Rosenthal and Wohlgemuth 2011). Artifact assemblages from the period include temporally diagnostic forms of beads (Olivella) and ornaments (Haliotis), charm stones (often found cached), cobble mortars, chisel ended pestles, and dart points. Other diagnostic artifacts include a wide array of bone tools including awls, fish spears, saws, and flake tools. During the transition from the Upper Archaic Period to the Emergent Period, the Central Valley experienced drier conditions resulting in resource depression of valley and lowland resources. Native groups abandoned the valley floor and relocated to upland foothill resource

areas (Moratto 2004). As the climate improved, people expanded downslope again to the valley floor.

Emergent Period (cal A.D. 1000—Historic)

The Emergent Period is characterized by the appearance of bow and arrow technology, the rise of wealth-linked social status, the specialization of bead manufacturing, and increased social complexity as indicated by increased variation in burial types and furnishings (Rosenthal et al. 2007; Bennyhoff and Fredrickson 1994; Milliken and Bennyhoff 1993). This period is also marked by the importance of fish and plant resources, and the use of the mortar and pestle (Rosenthal et al. 2007; Wohlgemuth 1996; Rosenthal and Wohlgemuth 2011). Archaeological deposits from this period have yielded diverse subsistence resources such as fish bone, various mammal and bird remains, and plant resources such as acorn, pine nut, and manzanita. Rosenthal and Wohlgemuth (2011) examined environmental and artifact assemblage data for several upland (west central Sierra Nevada) and lowland (Central San Joaquin Valley) archaeological sites. The authors suggest that plant intensification was adapted earlier in the lowland regions compared to the uplands due to the greater availability and spatial distribution of various resources in the valley, allowing for more residential stability and increased population. Artifact assemblages are characterized by small corner-notched and side-notched projectile points, Olivella lipped and clam disc beads and bead drills, magnesite cylinders, hopper mortars, pottery, clay balls, and village sites with house pits (Rosenthal 2007). This period is associated with the Sweetwater and Shasta Complexes in the northern Sacramento Valley and the Augustine Pattern in the lower Sacramento.

Ethnographic Context

It is estimated that 100,000 native people, roughly one-third of the state's native population, lived in the Central Valley at the time of European contact. Anthropologists from the twentieth century identified the Great Valley as the core of the California Culture area. Seven distinct languages, all from the Penutian family, were spoken among the eight various tribal groups living within the valley (Rosenthal et al 2010:149). The shared linguistic roots indicate a common heritage and culture. The Project is within the ancestral land boundaries of the Patwin band of the Southern Wintun people. A brief ethnographic summary of the Patwin people is provided below.

Patwin (River, Hill, and Sothern)

The Patwin fall into three geographical divisions, the River Patwin, the Hill Patwin, and Southern Patwin. The Hill Patwin inhabited areas within the Coast Ranges east of Clear Lake to Lodoga to the northeast, and areas west of the Sacramento River valley. The River Patwin occupied the valley west of the Sacramento River and west of Sutter Buttes, to as far north as Butte City, and as far south as Capay. The Southern Patwin inhabited areas in the Napa Valley, near Putah Creek east of Lake Berryessa, to the south at Suisun Bay, and to the west at Knights Landing. There were more river villages than in the Coast Range (Powers 1877:143). The location of habitation sites varied depending on the season and the highest density of habitation tended to be river villages with the Coast Ranges used to a lesser extent (Powers 1877). The low topography and presence of the Colusa Basin Drain makes this area prone to regular winter flooding while the summer months experience dry conditions (Colusa National Wildlife Refuge 2020). The Patwin favored areas along the edge of tule wetlands and other waterways, except during the wet season when the Patwin would use hunting camps at higher elevations within the open plains. The low bluff along the Sacramento River, where Colusa is now located, once consisted of tule wetlands

that were used for hunting waterfowl (Heizer 1975). The Patwin people practiced a mixed economy of resource procurement and focused on fishing, hunting, fowling, and collecting river salmon, as well as plant resources such as roots and seeds (Powers 1877). Acorns and wild oats were an important food staple and were gathered from groves of valley oaks, and often collected in mass quantities and stored in granaries (Powers 1877:143).

Historic contact between the Patwin people and European immigrants took a devastating toll on the indigenous people. Military raids, disease, epidemics, and forced servitude claimed many indigenous lives during the Spanish, Mexican, and American periods. Despite these tragedies, many Patwin descendants continue to live near their traditional homelands and exhibit a strong sense of cultural identity and continue to practice cultural traditions integrated with modern economic activities. Six prominent bands of Patwin currently live in the region and include the Cachil Dehe Band of Wintun Indians of the Colusa Indian Community; the Yocha Dehe Wintun Nation, formerly known as the Rumsey Band of Wintun Indians; Cortina Rancheria, the Kletsel Dehe Band of Wintun Indians; Estom Yumeka Maidu Tribe of the Enterprise Rancheria; Grindstone Rancheria of Wintun-Wailaki; and the Raskenta Band of Nomlaki Indians. These tribes are active participants of their communities through intertribal community service programs as well as offering environmental, educational, and recreational opportunities to the public such as the Cache Creek Casino Resort (Yocha Dehe Wintun Nation 2020). Similarly, the Cachil Dehe Band maintains the present-day Colusa Casino Resort, has a membership of 84 people, offers guided outdoor adventures to the public, and published a language book in 2004 (Colusa Indian Community 2020).

4.5.1.3 Historic Context

In California, the historic era is generally divided into three periods: the Spanish Mission Period (1769–1821), the Mexican Rancho Period (1821–1848), and the American Period (1848–present).

Spanish Mission Period (1769–1821)

The Spanish Mission Period—between 1769 and 1821—designates the time when the Spanish established missions along the California coast. The first recorded contact between California natives and Europeans occurred in 1542, when the Juan Rodriguez Cabrillo expedition traveled along the west coast of California. Between 1769 and 1833, the Spanish founded 21 missions from San Diego north to the San Francisco bay area (Presidio). Mission San Francisco de Asis (also Mission Dolores: founded in 1776), San Jose (founded 1797), Mission Sonoma (founded in 1823), San Francisco Solano (founded in 1823), San Rafael Archangel (founded in 1817), and Mission Santa Clara (founded 1777), were established along the central California coast, over 100 miles west and southwest of the Project. Although the inland areas of the Sacramento Valley were not settled by the Spanish, influences from coastal missions and presidios were felt inland by the end of the eighteenth century. The mission lands extended from the coast west to the valley. The local Patwin population was forcibly indoctrinated into the mission system and were baptized as neophytes. Many Patwin people were transported to mission San Francisco de Asis, San Jose, and Santa Clara. The padres used the Patwin people as laborers for the mission's large tracts of land, putting them to work with agricultural and ranching duties. The mental and physical health of the Patwin people suffered, and many people died or tried to escape to the interior valley. The padres would send soldiers to search and retrieve the people that escaped,

many were able to elude the soldiers. The transition between the Spanish release of their northern California territory to Mexico occurred during the early 1820s.

Mexican Rancho Period (1821–1848)

The period from 1821 to 1848 is referred to as the Mexican Rancho Period. In 1821, Mexico gained independence from Spain, and the secularization of the missions was completed in 1834. It was during this period that large tracts of land called ranchos were granted by the various Mexican Governors of Alta California, usually to individuals who had worked in the service of the Mexican Government. No Mexican land grants were identified for the Project site. In 1844 and 1845, three Mexican land grants were within Colusa County and include Rancho Colus, Jimeno (Colusa and Yolo County), and Larkin (Colusa and Glenn County). In 1845, the Rancho Colus was granted to John Bidwell by Mexican Governor Pio Pico. The rancho encompassed 8,887 acres of land that was located along the west bank of the Sacramento River and included the Patwin village Ko'roo or Korusi (Heizer and Hester 1970:84). This period is also characterized by declines in the Native American population in the Sacramento Valley due to infectious disease and loss of territory to both Mexicans and incoming European immigrants (Johnson 1978).

American Period (Post 1848)

Following the end of hostilities between Mexico and the United States in January 1847, the United States officially obtained California from Mexico through the Treaty of Guadalupe Hidalgo on February 2, 1848 (Hoover et al. 1962). In 1850, California was accepted into the Union of the United States, primarily due to the population increase created by the Gold Rush of 1849. This increase in foreign immigrants searching for riches and land further decimated the indigenous population. The mild climate, extensive fertile soils, and ample water sources made the Sacramento Valley region an attractive prospect for both agricultural and ranching industries. In 1846, William Bryant is recorded as one of the first European immigrants to settle in the area. Bryant's homestead was located near the mouth of Stony Creek. In 1850, Colusa County was established and included portions of land within current day Glenn and Tehama Counties (McComish 1918). The state passed legislative bills that separated Glenn (in 1856) and Tehama (in 1891) into their current respective boundaries. Monroeville was the original county seat for Colusa County. Monroeville was established on the ranch of Uriah P. Monroe within lands of the original Rancho Capay (within present day Tehama and Glenn Counties). The town of Colusa was established in 1850, and later became the County seat in 1854. By 1862, Colusa County had a population of 4,500 people. The settlement of the County by Euro-Americans began to increase as settlers were drawn to the area for economic purposes such as agriculture, mining, and infrastructure (Guinn 1906).

Specific to the Project site, federal land patent records listed several individuals for Township 14 North, Range 4 West, Sections 1, 2, and 3 between 1860 and 1869. Fredrick Bishop and William Henry Williams (together and separately) were granted land patents in the northeast quarter of Section 3 (approximately 248 acres) (GLO 2020). William Henry Williams came to California from Illinois in 1850 (Colusa County 2020b). He settled in Spring Valley (10 miles west from the town of Colusa) in 1851 and grew crops of wheat and barley, and raised sheep, cattle, hogs, and horses (Colusa County 2020b). Mr. Williams became a prominent landholder in Colusa County and his estate included over 7,000 acres of land. In the early 1870s, Mr. Williams provided a right of way grant to the Northern Railroad Company for an alignment of railroad that would cross through his lands (Colusa County 2020b). In anticipation of the coming railroad, Mr. Williams platted out his

land and sold several plots centered around the future railroad line. The parcels were sold to new settlers that eventually constructed residential and commercial buildings, and a post office. Thus, the new town of Central was established in 1874. The town was later renamed Williams in 1876 (in honor of W.H. Williams). Mr. Williams built a new home and a large grain building in Williams and continued farming and ranching. He lived the rest of his life in Williams and died in 1909 (Find a Grave 2020).

Federal land patent records indicate that Henry P. Eakle was granted 250 acres of land in 1869 in Township 14 North, Range 4 West, Sections 2 and 1 (GLO 2020). In 1832, Henry P. Eakle was born in Tennessee to German-Irish immigrant parents (Woodland Daily Democrat 1910). Mr. Eakle came out west to California in the early 1860s, where he built a home and farmed land near the town of current day Woodland. In 1867, Mr. Eakle moved to current day Colusa County where he purchased over 700 acres of land in Spring Valley. He built a large ranch in Spring Valley and raised livestock (Woodland Democrat 1910). During the mid to late nineteenth century, Mr. Eakle would acquire over 18,000 acres of land in current day Yolo, Colusa, Butte, and Lassen Counties (Woodland Daily Democrat 1910). At the time, he was considered one of the largest landowners in California. He was also interested in local politics and took an active role in public affairs (Woodland Daily Democrat 1910). He was a registered Democrat and was elected to represent Colusa County in the California legislature. Mr. Eakle provided legislature for the division of Colusa and Glenn Counties, he promoted infrastructure projects (e.g., road improvements), and was a large stockholder of the Central Irrigation Company. He served as the director during the initial organization of Central Irrigation Company (Woodland Daily Democrat 1910). Mr. Eakle died at his residence in Woodland in 1910 (Woodland Daily Democrat 1910).

Another prominent early settler of Colusa County was Jesse Curl Stovall. He became an important leader in the development of the town of Williams and the surrounding vicinity. He arrived in Colusa County in 1850 from Tennessee and became a banker, large landowner, and president of the Stovall-Wilcoxson Company. The company was a large grains operation. The town of Williams was incorporated into Colusa County in 1920 (Durham 1998:557). The main economic interest included agriculture and ranching.

Today, the Colusa County has a population of approximately 21,500 people and continues to primarily be an agricultural-based economy which includes crops of alfalfa, almonds, Asian pears, beans, corn, cotton, melons, onions, pistachios, prunes, pumpkins, rice, safflower, sunflowers, tomatoes, walnuts, wheat, and wine grapes (Colusa County 2020a). The County also promotes recreation and boasts three national wildlife refuges, the Delevan National Wildlife Refuge, the Colusa National Wildlife Refuge, and a part of the Sacramento National Wildlife Refuge where recreational wildlife photography and hunting is allowed dependent upon the season.

4.5.2 Regulatory Setting

Federal

National Register of Historic Places

The National Register of Historic Places (NRHP) was established by the National Historic Preservation Act, as “an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the Nation’s historic resources and to indicate what properties should be considered for protection from destruction or impairment” (36 CFR §60.2).

The NRHP recognizes both historical-period and prehistoric archaeological properties that are significant at the national, state, and local levels.

To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria, along with being at least 50 years old and possessing integrity to convey its significance (U.S. Department of the Interior 1995):

a. Are associated with events that have made a significant contribution to the broad patterns of our history;
b. Are associated with the lives of persons significant in our past;
c. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
d. Have yielded, or may be likely to yield, information important in prehistory or history.

Resources identified as eligible for or listed in the NRHP are automatically considered eligible for listing in the California Register of Historical Resources (CRHR).

American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1978 protects the rights of Native Americans to freedom of expression of traditional religions (24 United States Code [U.S.C.] §1996). This act established “the policy of the United States to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions… including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.”

State

California Environmental Quality Act

CEQA (Section 21084.1) requires a lead agency determine whether a project could have a substantial adverse change in the significance of a historical resource or tribal cultural resources (Public Resource Code [PRC] Section 21074 [a][1][A]-[B]).

Under the CEQA (Section 15064.5 (a)), a historic resource (e.g. building, structure, or archaeological resource) shall include resource that is listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR), or a resource listed in a local register or landmark, identified as significant in a historical resource survey (meeting the requirements of Section 5024.1(g) of the PRC), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California (Section 15064.5[a][3]). Under the California Code of Regulations (CCR), Title 14, Chapter 11.5, properties listed on or formally determined to be eligible for listing in the NRHP) are automatically eligible for listing in the CRHR. A resource is generally considered to be historically significant under CEQA if it meets the following criteria for listing in the CRHR (PRC SS5024.1, Title 14, CCR, Section 4852):

A. Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States (Criterion 1).
B. Associated with the lives of persons important to local, California or national history (Criterion 2).
C. Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values (Criterion 3).
D. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation (Criterion 4).

Under PRC Section 21074, tribal cultural resources are:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are either of the following:

(a) Included or determined to be eligible for the inclusion in the CRHR, or;

(b) Included in a local register of historical resources as defined by subdivision (k) of Section 5020.1 (designated or recognized historically significant by a local government pursuant to local ordinances or resolution).

(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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a “nonunique archaeological resource” as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

California Health and Safety Code, Section 7052 and 7050.5

Section 7052 of the California Health and Safety Code states that it is a felony to disturb Native American burials. Section 7050.5(c) requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the NAHC.

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act (the Act) applies to both state and private lands. The Act requires that upon discovery of human remains, construction or excavation activity cease and that the county coroner be notified. If the remains are Native American, the coroner must notify the NAHC. The NAHC will then identify and notify a most likely descendant. The Act stipulates the procedures the most likely descendant may follow for treating or disposing of the remains and associated grave goods.

California Public Resource Code, Sections 5097 *et seq.*

California PRC Section 5097 specifies the procedures to be followed in the event of an unexpected discovery of human remains on non-federal land. The disposition of Native American remains falls within the jurisdiction of the NAHC. Section 5097.5 of the Code states:

> "No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor."

As used in this section, "public lands" means lands owned by, or under the jurisdiction of the state or any city, county, district, authority, public corporation, or any agency thereof.

Assembly Bill 52

Under CEQA, Assembly Bill (AB) 52 requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. Consultations must include discussing the type of environmental review necessary, the significance of tribal cultural resources, and the significance of the project's impacts on the tribal cultural resources, and alternatives and mitigation measures recommended by the tribe. That consultation must take place prior to the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project. Section 4.18 Tribal Cultural Resources discusses the effort made to contact the tribes that may have an interest in the Project in compliance with AB 52.

Local

The Colusa County General Plan (in accordance with Government Code Section 65300 et seq.) identifies the County's vision for the future and provides a framework to guide decisions on growth, development, and conservation of open space and resources (Colusa County 2012). The County's policies regarding cultural resources are provided in the Conservation Element section are listed below:

- **Policy CON 3-1**: Require a cultural and archaeological survey prior to approval of any project which would require excavation in an area that is sensitive for cultural or archaeological resources. If significant cultural or archaeological resources, including historic and prehistoric resources, are identified, appropriate measures shall be implemented, such as documentation and conservation, to reduce adverse impacts to the resource.
- **Policy CON 3-2:** Require all development, infrastructure, and other ground-disturbing projects to comply with the following conditions in the event of an inadvertent discovery of cultural resources or human remains:

  a. If construction or grading activities result in the discovery of significant historic or prehistoric archaeological artifacts or unique paleontological resources, all work within 100 feet of the discovery shall cease, the County Department of Planning and Building shall be notified, the resources shall be examined by a qualified archaeologist,

paleontologist, or historian for appropriate protection and preservation measures; and work may only resume when appropriate protections are in place and have been approved by the County Department of Planning and Building.

b. If human remains are discovered during any ground disturbing activity, work shall stop until the County Coroner and County Department of Planning and Building have been contacted; if the human remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) and the most likely descendants have been consulted; and work may only resume when appropriate measures have been taken and approved by the County Department of Planning and Building.

- **Policy CON 3-3:** Encourage and cooperate with cities, special districts, State and Federal agencies in acknowledging and preserving the County's cultural heritage, historical and archaeological structures, sites and landmarks.
- **Policy CON 3-4:** Encourage voluntary landowner efforts to protect cultural resources consistent with applicable State law.
- **Policy CON 3-5:** Work with Native American representatives to identify and appropriately address, through avoidance or mitigation, impacts to Native American cultural resources and sacred sites during the development review process.
- **Policy CON 3-6:** Encourage Native American tribes to consult with the County prior to approval and development of new projects that may impact County resources, facilities, and the environment.
- **Policy CON 3-7:** Consistent with State local and tribal intergovernmental consultation requirements such as Senate Bill 18, the County shall consult with Native American tribes that may be interested in proposed new development and land use policy changes.
- **Policy CON 3-8**: Encourage the voluntary identification, conservation, and reuse of historical structures, properties, and sites with special and recognized historic, architectural, or aesthetic value.
- **Policy CON 3-9:** Encourage historic resources to remain in their original use whenever possible. The adaptive use of historic resources is preferred, particularly as museums, educational facilities, or visitor---serving uses, when the original use can no longer be sustained. Older residences may be converted to office/retail use in commercial areas and to tourist or business use in agricultural areas, so long as their historical authenticity is maintained or enhanced.
- **Policy CON 3-10:** Leverage the County’s strong agricultural and historic heritage to support and encourage historically oriented visitor programs and heritage tourism through cooperation with local, regional, and state marketing efforts.

4.5.3 Identification of Cultural Resources within the Project Site and Surrounding Area

In accordance with CEQA, cultural (historic resources) and tribal resources were identified by conducting a California Historical Resources Information Center records search of the Project and surrounding areas via the North West Information System (NWIC), Division of Anthropology,

California State University, Sonoma, a literature review (i.e., ethnographic and historic documents, historic aerial imagery and maps review, etc.), a NAHC Sacred Lands File (SLF) search, cultural resource pedestrian field surveys, and tribal consultation per AB 52, as discussed in the Regulatory Setting above.

Northwestern Information Center Results

The NWIC record search was conducted in August 2020 (NWIC File No.: 20-0128). As part of this records search, the NWIC database of survey reports and overviews was consulted, as well as documented cultural resources, cultural landscapes, and ethnic resources. Additionally, the search included a review of the following publications and lists: California Office of Historic Preservation Historic Properties Directory, NRHP, Office of Historic Preservation Archaeological Determinations of Eligibility, CRHR, California Points of Historical Interest, California Historical Landmarks, ethnographic information, historical literature, historical maps and plats, and local historic resource inventories. The records search focused specifically on the proposed Project site and transmission line corridor and a 1-mile buffer.

The NWIC records indicate 12 previous cultural resources studies have been conducted within the search area, of these, two studies overlap with the Project site, and 11 overlap with the transmission line corridor. These studies include survey and excavation and were conducted between 1980 and 1999 and overlap with less than one percent of the current Project site. The previous studies within the Project site and within 1 mile of the Project is listed in Table 4.5-1.

Table 4.5-1. Previous Cultural Resources Surveys Conducted within the Project site and transmission line corridor and within a 1-mile buffer.

Report No.	Year	Author(s)/ Affiliation	Title	Study Type	Within Project Area or 1-mile
S-004991	1980; 1982	Wirth & Associates, Inc.	*Western Leg - Alaska Highway Pipeline Project: Cultural Resources, Volume II, Pacific Gas Transmission Company, Pacific Gas and Electric Company, Evaluation of Previously Recorded Archaeological Sites; and Alaska Gasoline PEA*	Linear survey, site assessment	Crosses easternmost segment of Project Area (transmission line)
S-005156	1965	San Francisco State College	*Archeological Survey and Excavation Along the Tehama-Colusa Canal, Central California*	Block and linear survey and excavation	Crosses easternmost segment of Project Area (transmission line)
S-005207	1964	Pacific Gas & Electric Co.	*A Survey of Archeological Resources Along the Pacific Gas and Electric Company's Canadian Gas Line in California.*	Linear survey	Crosses easternmost segment of Project Area (transmission line)

Report No.	Year	Author(s)/ Affiliation	Title	Study Type	Within Project Area or 1-mile
S-012300	1990	INFOTEC Research, Inc; BioSystems Analysis, Inc	*Final Cultural Resources Assessment Report, PGT-PG&E Pipeline Expansion Project, Idaho, Washington, Oregon, and California, Phase 1: Survey, Inventory, and Preliminary Evaluation of Cultural Resources and Cultural Resources Inventory Atlas*	Linear survey	Crosses easternmost segment of Project Area (transmission line)
S-016206	1992	INFOTEC Research, Inc.	*Subcontract #20822-SC-41, Cultural Resource Studies, Phase-1 Surveys of Mainline and Blowdown Valve Sites (letter report)*	Small block survey (1.3 acre)	Crosses easternmost segment of Project Area (transmission line)
S-017298	1991	INFOTEC Research, Inc.; BioSystems Analysis, Inc.	*Archaeological Testing and Evaluation Report, 1990 Field Season, and Historic Properties Treatment Plan, for 1991 Field Season, PGT-PG&E Pipeline Expansion Project, Idaho, Washington, Oregon, and California. Volume I: Synopsis of Testing and Evaluation and Historic Properties Treatment Plan, Volumes I, II, III, IIID*	Linear project, survey, testing	Crosses easternmost segment of Project Area (transmission line)
S-020840	1998, 1999	Science Applications International Corporation	*Cultural Resource Survey for the Proposed Integrated Waste Management Facility on the Cortina Rancheria (letter report) and Eligibility Assessment of Three Archaeological Sites on the Cortina Indian Rancheria Lease Area for a Proposed Integrated Waste Management Facility, Colusa County, California*	Linear survey along road, and block survey of Cortina Rancheria	Crosses Project Area (solar site along Spring Valley Road)
S-022736	2000	Jones & Stokes Associates, Inc.	*Final Cultural Resources Inventory Report for Williams Communications, Inc., Fiber Optic Cable System Installation Project, Point Arena to Robbins and Point Arena to Sacramento, California: Volumes I, II, and III*	Linear survey	Crosses easternmost segment of Project Area (transmission line)
S-023674	1994	INFOTEC Research Inc. and Far Western Anthropological Research Group Inc.	*Archaeological Investigations, PGT-PG&E Pipeline Expansion Project, Idaho, Washington, Oregon, and California: Volume 1 Project Overview, Research Design and Archaeological Inventory, Volumes II, III, IV, V, V 1-3, and 37.0 Site CA-CCO-368, 36.0 Site CA-SOL-348*	Linear survey, and testing	Crosses easternmost segment of Project Area (transmission line)

Report No.	Year	Author(s)/ Affiliation	Title	Study Type	Within Project Area or 1-mile
S-028441	1999	Science Applications International Corporation	*Historic Resources Survey, Reister Ranch, Colusa County, California*	Architectural survey and evaluation of ranch	Crosses easternmost segment of Project Area (transmission line)
S-034962	2008	Coyote and Fox Enterprises	*Archaeological Reconnaissance for Proposed Annexation of Lands (326 acres) to the Westside Water District, West of Williams, Colusa County, California (LaGrande Annexation) and BUR080609A: Proposed Inclusion of 326 Acres into the Westside Water District, Colusa County, California (Project #08-NCAO-131)*	Archaeological block survey (326 acres) – pedestrian (220 acres) and 4-wheel all-terrain vehicle	Within 1-mile of Project Area (solar field and transmission line)
S-047656	1992	INFOTEC Research Inc.	*Final Cultural Resources Monitoring Plan for "A" Construction Spreads, PGT-PG&E Pipeline Expansion Project*	Linear survey	Crosses easternmost segment of Project Area (transmission line)

No previously recorded sites were identified within the Project site or transmission line corridor. Four previously recorded sites were identified within 1 mile of the Project. Three sites, P-06-000050, P-06-00205, and P-06-000304, are all prehistoric sites with cultural material such as lithics, bedrock milling features, midden, faunal material, and fire affected (cracked) rock. Site P-06-000222 is a dual component site consisting of a historic collapsed building, barn, and refuse, and a prehistoric habitation site with bedrock milling features. These sites are not evaluated for listing to the CRHR or NRHP. No previously recorded CRHR or NRHP eligible archaeological sites were identified within the Project site or transmission line corridor. The records search results for previously recorded sites are listed in Table 4.5-2.

Table 4.5-2. Previously Recorded Cultural Resources Identified within 1 mile of the Project site and transmission line corridor

Site No.	Time Period	Site Type	Date/ Recorder	CRHR/NRHP Eligibility
P-06-000050 (CA-COL-27)	Prehistoric	Lithic scatter (obsidian flakes) and habitation debris	1968, Raekeroy	Not Evaluated
P-06-00205 (CA-COL-220)	Prehistoric	Lithic scatter (obsidian), bedrock milling feature, petroglyphs	1996-1997, Mike Tyree	Not Evaluated
P-06-000222 (CA-COL-000146/H)	Prehistoric/ Historic	Historic: trash scatter, well, collapsed building and barn; Prehistoric: lithic scatter (obsidian), midden, faunal remains, bedrock milling station	1984, M.D. Donovan, R.M. Apple	Not Evaluated
P-06-000693 (CA-COL-000304)	Prehistoric	Lithic scatter (chert and obsidian), groundstone tools, fire cracked rock, and bedrock milling feature	2012, J. Eerkens, S. Cook, G. Burns	Not Evaluated

Historic U.S. Geological Survey Map and General Land Office Plat Map and Historical Aerial Review

To better understand historic land use, a review of historic maps and aerial imagery provides information regarding potential unrecorded historic features or sites within the Project site and transmission line corridor. Based on the historic maps and aerial imagery review, the Project and surrounding area appears as rural undeveloped agricultural land from the early 1900s to present day. Most surrounding roads were established between 1919 to 1964 (i.e., Highway 20 and Interstate 5). The area has remained rural agricultural land with few residential developments established within the Project Area since at least 1944. The results of the review of available historic aerials, General Land Office (GLO) plat maps, and United States Geological Survey (USGS) quadrangle maps are presented in Table 4.5-3 below.

Table 4.5-3. Review of Historic USGS Maps and Aerial Photographs for Township 14 North, Range 4 West, Section 1, 2, 3, and Township 14 North, Range 3 West, Section 1, Township 15 North, Range 4 West Section 25, Range 3 West Section 30

Map Name	Date(s)	Author	Description of Potential Resource within Project Area of Impact
GLO Plat Map	1858, 1871, 1882	Surveyor General's Office	No features or structures are illustrated within or near the Project site (T14N, R4W, 1, 2, and 3).
GLO Plat Map	1853, 1874	Surveyor General's Office	No features or structures are illustrated in within or near the Project site (T15N, R4W, Sections 25 and 36).
GLO Plat Map	1853	Surveyor General's Office	No features or structures are illustrated in the Project site (T15N, R3W, Sections 29 and 30).
USGS 1:62,500, Colusa, California	1907	USGS Staff	T14N, R3W Section 1: The Project site appears as undeveloped foothills. An east to west trending two-track road and Spring Valley Creek are south of the Project boundary.
USGS 1:31,680, Spring Valley, California	1918	USGS Staff	T14N, R3W, Section 1: The Project site appears as undeveloped foothills. An east to west trending two-track road and Spring Valley Creek are south of the Project boundary.
USGS 1:62,500, Wilbur Springs, California	1944	USGS Staff	T14N, R4W Sections 1-3: The Project and surrounding area is labeled "Spring Valley" and an east to west trending road is to the south of the Project site, a north to south trending road (Spring Valley Road) is to the west of the Project site and adjacent to the transmission line corridor. Spring Creek is south of the southern Project boundary. T14N, R4W, S2: two buildings are illustrated within the southern Project boundary, just north of Spring Creek. T15N, R4W Sections 25/326 and 35: Area appears undeveloped except for improved Spring Valley Road and Walnut Drive, and a building illustrated to the south of Walnut Drive. The area appears the same in 1961 except two additional buildings are located south of Walnut Drive in section 36.
USGS 1:62,50 Colusa, California	1953	USGS Staff	T15N, R4W Sections 25: Walnut Drive is present, a substation is to the north. T15N, R4W, 30: Walnut Drive is present, a transmission line crosses Walnut Drive, a substation is in section 29.
USGS 1:302,179, Ukiah, California	1956	USGS staff	The scale of the map is too large to discern specific details regarding the Project site. The surrounding Project region is labeled Spring Valley with a southwest to northeast interment drainage labeled Spring Creek. Cortina Ridge is illustrated West of the Project and the Colusa Basin is illustrated to the east.

Map Name	Date(s)	Author	Description of Potential Resource within Project Area of Impact
USGS 1:24,000, Cortina Creek	1953, 1973	USGS staff	T14N, R3W, Section 1: No buildings or features illustrated in Project site. T15N, R4W, Section 36, and T15N, R3W, Section 31, 30, 29 (transmission line corridor): a southwest to northeast trending linear transmission line is present, the line connects to a substation in section 39.
USGS 1:24,000, Wilbur Springs	1961	USGS staff	1961: T14N, R4W, Section 1-3: The Project site appears similar to 1944 map except the two buildings illustrated in Section 2 are no longer extant.
Historic Aerial	1937	EDR	T14N, R4W Section 1-3: The Project site and surrounding area appear as rural agricultural land with few buildings, roads, and plowed or tilled agricultural fields. Section 1: The Project site appears as plowed or tilled agricultural fields; Section 2: appears as plowed or tilled agricultural fields and undeveloped land (northwestern area), and one or two buildings within a square row of planted trees is present along the southern boundary of the Project site. The area surrounding the Project appears with an east to west trending road and creek (Spring Creek) to the south. A couple buildings are to the north of the Project site in Section 2, and a couple buildings are south of the Project site.
Aerial Imagery	1952	EDR	T14N, R4W, Sec 1: The Project site appears similar to pervious 1937 aerial, and as active plowed agricultural fields; Section 2: appears as undeveloped plowed or tilled agricultural fields and undeveloped land, the two buildings along the southern boundary of the Project site are no longer extent but the square row of planted trees are still present. A north to south trending road (Spring Creek Road) parallels the line of Sections 3 and 2.
Aerial Imagery	1957	EDR	T14N, R4W, Section 1-3, and T14N, R3W, Sec 1: The Project site appears as active tilled and plowed agricultural land with portions of undeveloped land. No changes compared to 1952.

GLO=General Land Office, USGS=United States Geological Survey; EDR=The Environmental Data Resources, Inc Aerial Photo Decade Package. No aerial imagery was available for T15N, R4W, Section 25 or T15N, R3W, Section 30.

Federal Land Patent Review

A search of federal land patents through the Bureau of Land Management's GLO Records website identified several early patent holders for Township 14 North, Range 4 West, Sections 1, 2, and 3, and Township 15 North, Range 4 West Section 35 and 25/36, Township 15 North, Range 3 West, Sections 31, 30, and 29. The patent holders include the State of California and several private individuals between 1860 through 1869. The patent holders include the State of California and several private individuals between 1860 through 1869. Federal land patents provide information on the initial transfer of land titles from the federal government to private (individuals or companies) or local governments by the title transfer authority. In addition to verifying title transfer, this information provides an association between an individual (Patentee, Assignee, Warrantee, Widow, or Heir) and a specific location (Legal Land Description) and time (Issue Date). The transfer authority statutes often outline requirements the patentee would be obligated to comply with in order to legally obtain and/or retain the land. Such title requirements may have resulted in construction of buildings, structures, or land improvements. See Table 4.5-4 for patent search results.

Table 4.5-4. Historic Land Patents for Township 14 North, Range 4 West, Sections 1, 2, and 3, Township 15 North, Range 4 West Section 25, 26, and 35; Township 15 North, Range 3 West, Sections 31, 30, and 29 Mount Diablo Baseline Meridian.

Patent # or BLM Accession #	Date	Patentee	Legal Description	Transfer Authority
CACAAA 000506	1/25/1866	State of California	T14N, R4W, S2 (S½), S1 (S½)	California Enabling Act, March 3, 1853 (10 Stat. 244)
CACAAA 006565	3/15/1869	Henry P. Eakle	T14N, R4W, S1 (N½) and S2 (N½, NE¼; SE¼, NE¼) total: 463 acres); S2 (N ½ NW 1/4 [lot 3 and 4] : 86 acres; NE¼ SW¼, NW¼ SE¼, SW¼ NE¼) total 120 acres	Sale Cash Entry, April 24, 1820 (3 Stat. 566).
CA0700.421	3/15/1869	Henry P. Eakle	T15N, R3W, S31 (SE¼, 320 acres)	Sale Cash Entry, April 24, 1820
CA0700.017	8/5/1869	Henry P. Eakle	T15N, R3W, S31 (SW¼: 132 acres)	Sale Cash Entry, April 24, 1820
CACAAA 006538	4/1/1861	Fredrick Bishop, William Henry Williams	T14N, R4W, S3 (NW¼, NW and NE¼; NE¼, NW and NE¼L Lots 1-4: 168 acres)	Scrip or Nature of Scrip, March 17, 1842 (5 Stat. 607)
CACAAA 006551	5/19/1866	Alexander Miller, John Richardson	T14N, R4W, S3 (SW¼: 160 acres)	Scrip Warrant Act of 1855 (10 Stat. 701), March 3, 1855
CACAAA 006517	12/1/1860	William Henry William	T14N, R4W, S3 (NE¼, S½: 80 acres)	Sale Cash Entry, April 24, 1820 (3 Stat. 566).
CACAAA 006556	12/1/1868	Levi H. Baker	T14N, R4W, S3 (W½, SW¼: 80 acres)	Sale Cash Entry, April 24, 1820 (3 Stat. 566).
CACAAA 006552	12/1/1868	Levi H. Baker	T14N, R4W, S3 (SW¼, NW¼: 40 acres)	Homestead Entry Original, May 20, 1862 (12 Stat. 392)
CA0700.301	12/1/1868	Jesse C Stovall	T15N, R3W, S29 (N½, NE¼; NE¼, NE¼; W½, SE¼; SE¼, SE¼: 720 acres)	Sale Cash Entry, April 24, 1820 (3 Stat. 566)
CACAAA 004920	5/15/1869	Jesse C Stovall	T15N, R3W, S29 (SE¼, SE¼; NE¼, N ¼: 80 acres)	Sale Cash Entry, April 24, 1820 (3 Stat. 566)
CA0700.319	12/1/1868	Jesse C Stovall	T15N, R3W, S30 (W ½, E½: 640 acres)	Sale Cash Entry, April 24, 1820 (3 Stat. 566)
CACAAA 0000148	12/31/1853	State of California	T15NR4W, S36 (E½)	March 3, 1853: California Enabling Act (10 Stat. 244)
CACAAA 007648	12/1/1860	Lyman Crandall, Joseph Pulsifer	T15NR4W, S25 (SE¼, SE¼)	March 17, 1842: Scrip or Nature of Scrip (5 Stat. 607)
MW-0431-151	12/1/1860	Lyman Crandall, Joseph Pulsifer	T15NR4W, S25 (SW¼, SW¼)	March 3, 1855: Scrip Warrant Act of 1855 (10 Stat. 701) (Militia: Lieutenant Princes First Regiment United States Infantry)
CACAAA 007648	12/1/1860	Lyman Crandall, Joseph Pulsifer	T15NR4W, S26 (SE¼, SE¼)	March 17, 1842: Scrip or Nature of Scrip (5 Stat. 607)
CA0700.378	3/15/1866	Jesse Curl Stoval	T15NR4W, S26 (E ½)	April 24, 1820: Sale-Cash Entry (3 Stat. 566)

T=Township, R=Range, S=south, W=west, N=north, E=east

Native American Heritage Commission Sacred Lands Files Search

Tetra Tech contacted the NAHC on July 17, 2020 and requested a review of the NAHC's SLF. The NAHC replied on July 21, 2020 that results were negative for Native American tribal resources within the Project and provided a list of local Native American contacts with knowledge of the proposed Project area. Per AB 52, the County conducted tribal consultation (see Section 4.18). Mr. Leland Kinter, Tribal Historic Preservation Officer of the Yocha Dehe Wintun Nation

responded on July 23, 2020 and requested worker cultural sensitivity training and tribal monitors to be present during Project construction (see Section 4.18 Tribal Cultural Resources). Consultation is ongoing.

Archaeological Field Survey and Results

Tetra Tech's qualified archaeological team conducted a Phase I archaeological survey of the Project site in November 2020 and July 2021, and for the entire 4.1-mile transmission line corridor in March of 2021. The archaeological team included a principal investigator, field director, and two archaeological technicians. The archaeological crew surveyed the entire Project site utilizing transects spaced 15 meters apart. The surveyed area consisted of open, disced, and tilled (row crops) agricultural fields and rolling hills. The depth of disced/tilled agricultural disturbance is estimated at approximately 1.5 feet below ground surface (plow zone). Ground surface visibility was good to excellent (50 percent or greater) throughout most of the Project area and transmission line corridor. Approximately 20 percent of the Project area exhibited annual grasses with poor to fair ground surface visibility (10 to 50 percent). On the Project site vegetation cover included non-native grasses, low growing herbaceous plants, disturbed riparian areas and drainages with sparse native and non-native trees, and artificial ponds for cattle. In areas of poor ground visibility, the field crew periodically stopped along transects to clear debris and ground cover to inspect exposed ground surface for cultural materials, changes in soil color and texture, or other evidence of previous human occupation. The Project site is also actively grazed by cattle and horses.

The transmission line corridor survey area consisted of the graded and graveled Spring Valley Road and paved Walnut Drive County road right of way. Survey transects were conducted along the road shoulder on each side of both roads. Ground visibility was overall very good with some areas of annual grasses. The soils primarily consisted of light brown silty sand and clay with some gravel, and road fill. Disturbances along the transmission line corridor include construction and continued maintenance of the graveled and paved Spring Valley Road and paved Walnut Drive road and shoulder right-of-way, an existing single pole transmission line along Spring Valley Road and Walnut Drive, the Tehama-Colusa Canal crosses Spring Valley Road underground near the intersection of Spring Valley Road and Walnut Drive, an underground utility along the southern road shoulder right-of-way of Walnut Drive, an existing fence line along Spring Valley Road and Walnut Drive road shoulder, and agricultural fields immediately adjacent to the road. No cultural resources were identified within the transmission line corridor.

The Phase I survey of the Project site resulted in the identification of eight isolated finds P-06-000809, P-06-000810, P-06-000811, P-06-000812, P-06-000813, P-06-000814, P-06-000815, and P-06-000816 (three prehistoric, five historic era). The three prehistoric isolates consist of a lithic flake, and two hand stones), the historic isolates consist of domestic and agriculture related refuse and a dilapidated windmill. All the isolates were identified within an open, tilled agricultural fields, also used for livestock grazing, and lack archaeological context, and no other cultural material or features were observed. Due to the limited amount of information isolates can provide and their lack of associated context, isolates are typically considered not eligible for listing in the CRHR, nor are they considered historical or unique archaeological resources under CEQA. The eight isolates identified during the survey do not fall under these circumstances and possess little probability for new information that would contribute substantially to the prehistoric or historic history.

The Phase I survey also resulted in the identification of two archaeological sites P-06-000807 (historic refuse), P-06-000808 (CA-COL-363H) (historic refuse and landscaped area) within the Project site.

Site P-06-000807 consists of a diffused historic era refuse area consisting of 16 shards of glass, two fragments of ceramic, two fragments of porcelain, and miscellaneous hand forged metal fragments, a railroad tie, a belt buckle, a metal gear, and an enamelware pot hand within an ephemeral drainage. No features or other cultural material were observed. A search of available literature, historic maps and aerial imagery, and online newspapers did not identify any additional information regarding the site location. Based on the historic production dates of the glass and ceramics, the site dates to approximately 1915 to the 1920s. The assemblage suggests domestic dumping activities from the early twentieth century. It appears to be a single episode of dumping. Ground surface visibility at the time of recording was good and it is unlikely any associated artifacts are unidentified. Furthermore, the site is within an ephemeral drainage and is highly disturbed and lacks intact cultural material and integrity due to episodic water runoff resulting in soil erosion. As such, recordation of the refuse has exhausted the data potential of the site. As such, the site is not considered CRHR eligible under Criterion 1 as the site does not appear to be associated with a significant event in national or local history, or Criterion 2 as it does not appear to be associated with a person who played a significant role by in national or local history, or Criterion 3, due to its nature, the diffuse refuse scatter does not embody the distinctive characteristics of an architectural style or architect or exhibit high artistic value. The site is within a highly disturbed area. The recordation and documentation of the site has likely exhausted the data potential of the site and is not eligible under Criterion 4. Therefore, the site is not eligible for listing to the CRHR.

Site P-06-000808 (CA-COL-363H) consists of a diffused historic era refuse area consisting of three shards of glass, five shards of porcelain, a cement block, a subsurface well feature, and planted native and non-native ornamental and food producing trees (a pepper tree, a walnut tree). A search of available historic maps and aerial imagery indicate there were two buildings and an alignment of trees (formed like a square around the buildings) located within the site area in 1937. Historic aerial imagery indicates the buildings were demolished and no longer extant by 1952, but the trees are still present. Federal land office patent records indicate the property was granted to the State of California in 1866. No additional archival information regarding the property or previous owners was available. Based on historic maps and aerial imagery and the glass jar base embossed maker's mark (c. 1930s–post), the site most likely dates from the 1930s to 1952. No intact foundations or structural features were observed. The well feature is not illustrated on any historic maps and no chronological indicators were present (e.g., embossed lid). The two buildings are no longer extant and were demolished and leveled with no remaining intact historic structures, features, or debris (e.g., foundations, milled lumber, domestic debris). The refuse scatter is extremely sparse, and the material is common and an insignificant representation of historic activities at the site and in the region. Due to the lack of features and artifacts, it appears the site was used minimally and for a very short period.

As such, the site is not considered CRHR eligible under Criterion 1 as the site does not appear to be associated with a significant event in national or local history. Tetra Tech recommends the site is not eligible for listing in the NRHP CRHR under Criterion 2. The site does not appear to be associated with a person who played a significant role by in national or local history. The site is

recommended not eligible for listing on the CRHR under Criterion 3. By its nature, the diffuse refuse scatter or landscaping does not embody the distinctive characteristics of an architectural style or architect or exhibit high artistic value. The site is within a highly disturbed area. The original two buildings demolished, leveled, and graded, and the remaining debris removed off site. The diffuse refuse scatter is minimal, disturbed due to agricultural practices, and it is unlikely that intact subsurface cultural deposits exist. The recordation and documentation of the site has likely exhausted the data potential of the site (Criterion 4). Therefore, the site is not eligible for listing to the CRHR. In addition, this site is not within the area of direct impact for the solar facility construction and will be avoided by Project ground disturbing activities.

Therefore, the eight isolates and two sites were recommended not eligible for listing to the CRHR. The Project site is comprised of Pliocene terrace deposits of the Tehama Formation within the hilly higher elevation areas and Pleistocene to Holocene alluvial fan deposits in lower elevation areas. Soils range from approximately 0 to 79 inches in depth across the site. Disturbances across the Project site include erosional washes, annually disced fields, earthen cattle ponds, and cattle grazing. The depth of disturbance across the area of potential effect most likely varies from approximately 0 to 1.5 feet (plow zone), and approximately three feet for the cattle ponds. The agricultural fields have been seasonally disturbed for many decades (i.e., seasonal plowing/tilling of soils), such activities often bring subsurface archaeological deposits to the surface. No such significant deposits were identified within the Project site during the Phase I survey.

The transmission line corridor is covered in fill soils and disturbed native soils. Native soils range from approximately 0 to 79 inches in depth within the road right-of-way. Disturbances across the transmission line right of way include subsurface excavations associated with the construction of the existing raised gravel Spring Valley Road and paved Walnut Drive, adjacent fence lines, Tehama-Colusa Canal, and the existing transmission line. The depth of disturbance across the transmission line corridor most likely varies from approximately 1 to 15 feet (deepest disturbance at Tehama-Colusa Canal crosses Spring Valley Road underground).

Based on the natural setting, landforms, NAHC SLF results, records search results (including historic maps), previous survey coverage and site density, and disturbance to native soils, the area of potential effect is assessed as having a low to low- moderate sensitivity for archaeological resources in undisturbed native subsurface soils. Specifically, areas predicted to be sensitive for archaeological resources include undisturbed subsurface soils near Salt and Spring Creek, and areas with undisturbed subsurface soil deposition of late Pleistocene to Holocene alluvium deposits. Therefore, there is a potential that buried archaeological deposits may be inadvertently discovered during Project related subsurface ground disturbing activities at depths below 1.5 to 3 feet across the Project site, and 1 to 15 feet (at the Tehama Canal underground crossing) along the transmission line corridor.

Built Environment

There are no historical architectural resources within the Project site. Located adjacent to the Project site at 1958 Spring Valley Road (Assessor Parcel Number 018-050-005) and 4872 Walnut Road (Assessor Parcel Number 016-190-021-000) are buildings and agricultural structures. A farm and agricultural buildings are located at 1830 Spring Valley Road (Assessor Parcel Number 018-050-011). And two existing transmission lines – a 60-kilovolt transmission line (constructed in the 1980s) that is within the Project site and is part of the proposed Project, and a 250-kilovolt

transmission line (Delevan-Cortina Transmission line, constructed over 45 years ago) that is adjacent, but not within, the Project site. None of the buildings and structures adjacent to the Project site and transmission line corridor have been evaluated for historic significance to merit eligibility as a historic resource under CEQA, Tetra Tech's architectural historians, analyzed the Project activities and its potential to directly or indirectly impact the buildings and structures to determine if an evaluation was warranted. The analysis resulted in no historic architectural resources within or adjacent to the Project that will be significantly adversely impacted by the Project.

4.5.4 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the CEQA Guidelines. The proposed Project would have a significant impact to cultural resources if it would result in any of the following:

- *Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*
- *Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*
- *Disturb any human remains, including those interred outside of formal cemeteries?*
- *Cause adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred plan, or object with cultural value to a California Native American tribe, and that is:*
  - *i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or*
  - *ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, as the CEQA lead agency, has considered the significance of the resource to a California Native American tribe.*

4.5.5 Impacts Analysis

IMPACT 4.5-1: *Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?* **(No Impact)**

The construction of the proposed Project is not anticipated to impact historic or unique resources. Based on the background studies and Phase I field survey, there are no known resources found in the Project area or within the transmission line corridor that meet CEQA's definition of a historical resource or unique resource. As a result of the 2020/2021 Phase I surveys of the Project site, eight isolated finds and two historic sites were identified. However, neither the isolate finds nor historic sites are eligible for listing on CRHR and do not fit CEQA's definition of a historic or unique resource. Therefore, the Project would have no significant impact to a historic or unique resource pursuant to §15064.5.

IMPACT 4.5-2: *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?* **(Less than Significant Impact with Mitigation Incorporated).**

As discussed above, the eight isolated finds and two archaeological sites are not eligible for listing on CRHR and do not fit CEQA's definition of a significant archaeological resource pursuant to §15064.5.

Construction of the Project could potentially impact previously unidentified, buried archaeological resources. Based on the natural setting, landforms, NAHC SLF results, records search results (including historic maps), Phase I survey, known site density, and disturbance to native soils, the Project area is assessed as having a low to low-moderate sensitivity for buried archaeological resources. If construction ground disturbance depths extend to native soils (below 1.5 feet within plowed agricultural fields, and 2 feet within transmission line corridor), there would be a potential to impact previously unrecorded subsurface archaeological resources. In the event that previously unidentified archaeological resources are discovered during ground disturbing activities during construction, the Project may have significant impacts. In order to reduce the potential impacts mitigation measures **CUL-1**, which requires worker awareness training regarding tribal and cultural resources, and **CUL-2**, the inadvertent discovery of cultural resources should be implemented; and **CUL-3** monitoring of Project construction by a tribal monitor(s). Thus, the Project would have less than significant impacts to historic, tribal, and archaeological resources with the implementation of mitigation measures **CUL-1** and **CUL-2, and CUL-3**.

IMPACT 4.5-3: *Would the project disturb any human remains, including those interred outside of formal cemeteries?* **(Less than significant Impact)**

As discussed in **Impacts 4.5-1** and **4.5-2**, no human remains or cemeteries were identified within the Project Area as a result of the NWIC record search, NAHC SLF search, AB 52 notification (see Section 4.18), and pedestrian field survey. Existing regulations require that if human remains and/or cultural items defined by Health and Safety Code, Section 7050.5, are inadvertently discovered, all work in the vicinity of the find would cease within 100 feet of the find and the Colusa County Coroner (Sheriff-Coroner Unit Telephone Number: 530.458.0200) would be contacted immediately.

If the remains are found to be Native American as defined by Health and Safety Code, Section 7050.5, the Colusa County Coroner will contact the Native American Heritage Commission by telephone within 24 hours. The coroner will have two working days to examine the remains after being notified by the responsible person. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the NAHC. When the NAHC receives notification of a discovery of Native American human remains from the county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American (California Public Resources Code § 5097.98 (a). The most likely descendent has 48 hours to make recommendations to the landowner, or representative, for the treatment or disposition, with proper dignity, of the human remains and grave goods. Reburial of human remains, and/or funerary objects shall be accomplished in compliance with the California Public Resources Code § 5097.98 (a) and (b).

Compliance with existing regulations will ensure that any impacts to human remains would be less than significant.

4.5.6 Mitigation Measures

The following mitigation measures are recommended to reduce significant impacts to cultural and tribal resources.

CUL-1: Cultural Resource Worker Education/Training: Prior to Project construction related to ground disturbing activities (e.g., vegetation removal, excavation, trenching, grading), the Project proponent shall conduct a worker education awareness program for Project construction personnel. A qualified archaeologist will be retained for the Project and will prepare and present the initial cultural resource briefing of the worker education awareness program prior to ground disturbing activities. During construction, the Applicant will provide the training to all new construction personnel. The cultural resource training will include an overview of applicable laws and penalties pertaining to disturbing cultural resources, a brief discussion of the prehistoric and historic regional context and archaeological sensitivity of the area, types of cultural resources found in the area, instruction that Project workers will halt construction if a cultural resource is inadvertently discovered during construction, and procedures to follow in the event an inadvertent discovery (Inadvertent Discovery Plan discussed below) is encountered, including appropriate treatment and respectful behavior of a discovery (e.g., no posting to social media or photographs). Per Mr. Kinter's request, Laverne Bill, Cultural Resources Manager of the Yocha Dehe Wintun Nation, shall be notified to participate in the cultural sensitivity/environmental training to discuss or provide text from a tribal cultural perspective regarding tribal cultural resources within the region during the initial pre-construction environmental training.

CUL-2: Inadvertent Discovery of Archaeological Resources During Construction: A qualified archaeologist shall be retained to prepare an Inadvertent Discovery Plan for the Project and to be on-call in the event of an inadvertent discovery. The Inadvertent Discovery Plan will provide protocols and notification procedures in the event of an inadvertent discovery. During Project construction (e.g., ground disturbing activities such as vegetation removal, excavation, trenching, grading), should subsurface archaeological resources be discovered, all ground disturbing activities within 50 feet of the find shall cease and the qualified archaeologist shall be contacted to assess the significance of the find according to CEQA Guidelines Section 15064.5 and/or NRHP criteria (as applicable). If any find is determined to be significant, the archaeologist shall determine, in consultation with the implementing agencies and any local consulting Native American groups expressing interest, appropriate avoidance measures or other appropriate mitigation. Under CEQA Guidelines Section 15126.4(b)(3), preservation in place shall be the preferred means to avoid impacts to archaeological resources qualifying as historical resources. Methods of avoidance may include, but shall not be limited to, Project reroute or re-design, or identification of protection measures such as capping or fencing. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures, such as data recovery or other appropriate measures, in consultation with the implementing agency and any local consulting Native American representatives expressing interest in prehistoric or tribal resources. If an archaeological site does not qualify as an historical resource but meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site shall be treated in accordance with the provisions of Section 21083.2. In regard to an inadvertent discovery of

human remains: existing regulations require that if human remains and/or cultural items defined by Health and Safety Code, Section 7050.5, are inadvertently discovered, all work in the vicinity of the find would cease and the Colusa County Coroner (Sheriff-Coroner Unit Telephone Number: 530.458.0200) would be contacted immediately. If the remains are found to be Native American as defined by Health and Safety Code, Section 7050.5, the coroner will contact the NAHC by telephone within 24 hours.

CUL-3: Native American Consultation and Monitoring and Monitoring Plan: The County and Applicant should continue to consult with interested tribes throughout the planning process and construction of the Project, as applicable. A tribal monitor from the Yocha Dehe Wintun Nation (or other local tribe as available) shall be notified to participate in monitoring visibly exposed, excavated subsurface soils associated with ground-disturbing construction activities (e.g., grading and trenching). The retained on-call Secretary of Interior qualified archaeologist shall assist in the preparation of a cultural resource monitoring plan and inadvertent discovery plan (**CUL-2**) that will include the worker resource education, inadvertent discovery procedures, and outline the guidelines for cultural resources monitoring. The Project archaeologist will coordinate with local tribes regarding the monitoring plan and tribal cultural resource monitoring of subsurface ground disturbing Project activities. At the completion of construction, a final monitoring report shall be prepared for the Project that summarizes the daily monitoring activities and resolution of any inadvertent discoveries identified during construction of the Project. The report will be submitted to the County and the NWIC.

4.5.7 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements made would be within the existing Cortina Substation footprint.

Through the implementation of **Mitigation Measures CUL-1, CUL-2**, and **CUL-3** these improvements would not have a substantial adverse effect on any tribal or cultural resources, and no additional mitigation measures would be required.

4.5.8 Cumulative Impacts

Cumulative impacts to historic resources consider the impact of the proposed Project in connection with past or related future projects. The CEQA Guidelines define a cumulative impact as two or more individual effects which, when considered together, are considerable, or which compound, or increase other environmental impacts. When analyzing cumulative impacts to cultural resources, an assessment is made of impacts on individual resources as well as the inventory of cultural resources within the cumulative impact analysis area. The cumulative area for cultural resources is the Project site and transmission line corridor plus a half-mile buffer. No structures or buildings of historic age or historic resources were identified within the proposed Project area or within a half-mile of the proposed Project. Thus, implementation of the proposed Project would not contribute to cumulative impacts to historic resources and would result in a less than significant impact. If construction ground disturbance depths extend to native soils

(approximately 1.5 to 3 feet or more in depth), there would be a potential to impact previously unrecorded subsurface cultural resources or human remains. As discussed above, Mitigation Measures **CUL-1 through CUL-3**, would mitigate impacts to cultural resources to be less than significant, and compliance with existing regulations would ensure that any impacts to human remains would be less than significant. In addition, cultural resources that are potentially affected by related or future projects would be subject to the same requirements of CEQA and the laws and regulations discussed above in Section 4.5.2 Regulatory Setting. Therefore, the Project would contribute to a less than significant cumulative impact to cultural resources.

4.5.9 References

Powers, Stephen. 1877. Tribes of California. *Contributions to North American Ethnology 3*. U.S. Geographical and Geological Survey of the Rocky Mountain Region, Washington.

Rich, E. I.1971. *Geological Map of the Wilbur Springs Quadrangle, Colusa and Lake Counties*. U.S. Geological Survey. Electronic document, https://ngmdb.usgs.gov/Prodesc/proddesc_444.htm accessed January 1, 2021.

Rosenthal, J. S., and E. Wohlgemuth. 2011. Hill People and Valley People: Human Adaptive Responses to the Biogeography of Central California. In A New Frame of Reference: Prehistoric Cultural Chronology and Ecology in the North-Central Sierra Nevada, edited by J.S. Rosenthal, pp. 177-190, Center for Archaeological Research at Davis, Publication No. 16, University of California, Davis.

Rosenthal, Jeffrey S., Gregory G. White, and Mark Q. Sutton. 2007. The Central Valley: A View from the Catbird's Seat. In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar. Altamira Press.

U.S. Department of the Interior. 1995. How to Apply the National Register Criteria for Evaluation. Available at: https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf. Accessed July 2021.

USDA Web Soil Survey. 2020. United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey. Webpage, www.websoilsurvey.sc.egov.usda.gov/App/HomePage.htm, accessed November 18, 2020.

Wohlgemuth, Eric. 1996. Resource Intensification in Prehistoric Central California: Evidence from Archaeobotanical Data. Journal of California and Great Basin Anthropology 18(1):81-103.

Woodland Daily Democrat. 1910. H.P. Eakle Sr. Passes Away. A Prominent, Respected, and Successful Citizen. Electronic document, https://www.newspapers.com/clip/6308372/henry-poffenberger-eakle-sr-dies/, accessed, January 2021.

Yocha Dehe Wintun Nation. 2020. Yocha Dehe Wintun Nation. Electronic document, www.yochadehe.org, accessed December 16, 2020.

4.6 ENERGY

This section identifies and evaluates issues related to Energy in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County did not receive any scoping comments related to Energy.

4.6.1 Existing Conditions

Total energy usage in California was 7,967 trillion British Thermal Units (Btu) in 2018 (the most recent year for which specific data are available), which equates to an average of 202 million Btu per capita. These figures place California second among the nation's 50 states in total energy use and 48th in per capita consumption (EIA 2021b).

4.6.1.1 Electricity

In 2019 (the last year for which updated information is available), total system electricity generation for California was 277,704 gigawatt-hours (GWh), down 2.7 percent from 2018's total generation of 285,488 GWh. Approximately 72 percent of the electrical power needed to meet California's demand is produced in the state; the balance, approximately 28 percent, is imported from the Pacific Northwest and the Southwest. In 2019, California's in-state electricity generation was derived from natural gas (43 percent); large hydroelectric resources (17 percent); nuclear sources (8 percent); oil and coal (less than 1 percent); and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (32 percent). Of the approximately 64,336 GWh generated from renewable sources in the state, solar-generated electricity made up the highest proportion (44 percent), followed by wind (21 percent), geothermal (17 percent), biomass (9 percent), and small hydroelectric (8 percent) (CEC 2021a).

4.6.1.1.1 Pacific Gas and Electric

Pacific Gas and Electric (PG&E) is an investor-owned utility company that provides electricity supplies and services throughout a 70,000 square-mile service area that includes Colusa County and extends from Eureka in the north, to Bakersfield in the south, and from the Pacific Ocean in the west, to the Sierra Nevada mountains in the east.

PG&E provides electricity to the six million customers in its service territory, including residential, commercial, industrial, and agricultural consumers. In 2020, PG&E generated and/or procured a total of 35,838 GWh of electricity.[1] Of this total, PG&E owns approximately 7,662 MW of generating capacity, itemized below (see Table 4.6-1). The remaining electrical power is purchased from other sources in and outside of California.

[1] This amount excludes electricity provided to direct access customers and Community Choice Aggregation (CCA) entities who procure their own supplies of electricity.

Table 4.6-1. PG&E-Owned Electricity Generating Sources (2020)

Source	Generating Capacity (MW)
Nuclear (Diablo Canyon - 2 reactors)	2,240
Hydroelectric	3,867
Fossil Fuel-Fired	1,400
Fuel Cell	3
Solar Photovoltaic (13 units;12 in Fresno County, 1 in Kings County)	152
Total	7,662

Source: PG&E 2021a

As shown in Table 4.6-2, during 2020, 35.6 percent of PG&E's energy deliveries were from renewable energy sources (PG&E 2021a).

Table 4.6-2. PG&E 2020 Renewable Energy Sources

Source	Percent of Total Energy Portfolio
Bioenergy	2.8
Geothermal	2.6
Wind	12.9
Renewable Portfolio Standard-Eligible Hydroelectric	1.2
Solar	16.1
Total	35.6

Source: PG&E 2021a

Table 4.6-3 shows electricity consumption by sector in the PG&E service area based on the latest available data from the California Energy Commission (CEC). As shown in the table, PG&E delivered approximately 78,072 million kilowatt-hours (kWh) in 2019, of which approximately 9,710 million kWh were consumed by the industrial sector.

Table 4.6-3. Electricity Consumption in PG&E Service Area (2019)

Agricultural and Water Pump	Commercial Building	Commercial Other	Industry	Mining and Construction	Residential	Streetlight	Total Usage
All Usage Expressed in Millions of kWh							
4,490	29,560	4,349	9,710	1,642	28,014	308	78,072

Source: CEC 2021d

In Colusa County, approximately 285.5 GWh of electricity was consumed in 2019, with approximately 217.9 GWh consumed by non-residential uses (CEC 2021c).

4.6.1.1.2 Local Energy Infrastructure

There are no other utility scale solar facilities in Colusa County. Existing electrical infrastructure in the Project vicinity includes transmission lines and PG&E's Cortina Substation, which is located on Walnut Drive approximately 2 miles northeast of the Project site. The existing Cortina-

Mendocino 115 kilovolt (kV) transmission line runs generally east-west from the Cortina Substation north of the Project site.

The proposed Project would involve construction and operation of an 80 MW photovoltaic (PV) solar facility and an up to 80 MW battery energy storage system (BESS) facility. These components would connect to PG&E's existing Cortina Substation via a new 60 kV overhead generation tie (gen-tie) line to distribute electricity to customers within the local and regional grid by PG&E. The proposed Project would operate year-round to generate electricity from the PV facilities during daylight hours, and the battery storage system would be used to dispatch additional electricity during either daylight or non-daylight hours.

4.6.1.2 Transportation Fuels

According to the CEC, the state relies on petroleum-based fuels for approximately 85 percent of its transportation needs as it is the largest consumer of motor gasoline and jet fuel (EIA 2021a). In 2020, 34.9 percent of California's crude oil was produced within the state, 17.6 percent was produced in Alaska, and the remaining 47.5 percent was produced in foreign lands (CEC 2021b).

In 2020, taxable gasoline sales (including aviation gasoline) in California accounted for approximately 14 billion gallons of gasoline (CDTFA 2021a), and taxable diesel fuel sales accounted for approximately 3 billion gallons of diesel fuel (CDTFA 2021b). Statewide, there was an overall decrease in gasoline and diesel consumption in 2020 and 2021 due to the economic shutdown associated with the COVID-19 outbreak.

The CEC estimates that 31.5 million gallons of gasoline was sold in 2019 in Colusa County (CEC 2020).

4.6.2 Regulatory Setting

4.6.2.1 Federal

4.6.2.1.1 National Energy Conservation Policy Act

The National Energy Conservation Policy Act (42 USC §8201 et seq.) provides federal energy management goals and requirements. The National Energy Conservation Policy Act establishes energy-efficiency standards for new construction.

4.6.2.1.2 National Energy Policy Act of 2005

The National Energy Policy Act of 2005 (42 USC §13201 et seq.) sets equipment energy efficiency standards and provides incentives to reduce current demand on nonrenewable energy resources. For example, the act provides for federal tax credits for purchasing fuel-efficient appliances, hybrid vehicles, and constructing energy-efficient buildings. The act includes incentives for renewable energy production, including solar power.

4.6.2.1.3 Energy and Independence Security Act of 2007

The Energy and Independence Security Act of 2007 (42 USC §17001) includes key provisions related to fleet vehicle fuel economy, renewable fuel standard goals, including ethanol and other advanced biofuels, and appliance and lighting efficiency standards.

4.6.2.2 State

4.6.2.2.1 Warren-Alquist Act

The 1975 Warren-Alquist Act (Pub. Res. Code §25000 et seq.) established the California Energy Resources Conservation and Development Commission, now known as the CEC. The act established a state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures.

4.6.2.2.2 Renewables Portfolio Standard

California's Renewable Portfolio Standard (RPS) Program was enacted in 2002 and accelerated in 2006, requiring investor-owned utilities to obtain 20 percent of their electric supply from renewable energy sources, such as solar, by 2010. On April 12, 2011, Governor Brown signed Senate Bill (SB) 2X, requiring California retail electric providers, such as PG&E, to procure 33 percent of their retail energy sales from eligible renewable sources by 2020. In October 2015, Governor Brown signed into legislation SB 350, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030 (CPUC 2021a).

On September 10, 2018, Governor Brown signed SB 100, establishing that 100 percent of all electricity in California must be obtained from renewable and zero-carbon energy resources by December 31, 2045. SB 100 also created new standards for the RPS goals that were established by SB 350 in 2015. Specifically, the bill increases required energy from renewable sources for both investor-owned and publicly-owned utilities from 50 percent to 60 percent by 2030. Incrementally, these energy providers also are required to have a renewable energy supply of 33 percent by 2020, 44 percent by 2024, and 52 percent by 2027. The updated RPS goals are considered achievable, since many California energy providers are already meeting or exceeding the RPS goals established by SB 350. Governor Brown signed Executive Order B-55-18 with a new statewide goal to achieve carbon neutrality (zero-net greenhouse gas [GHG] emissions) by 2045 and to maintain net negative emissions thereafter.

4.6.2.2.2.1 Energy Storage

Assembly Bill (AB) 2514, passed in 2010, resulted in the California Public Utilities Commission setting a 1,325 MW storage target by 2020 for investor-owned utilities. The three major investor-owned utilities in the state, including PG&E, have exceeded the AB 2514 target of 1,325 MW. AB 2868, passed in 2016, requires California's three major investor-owned utilities to propose programs and investments for up to an aggregate 500 MW (166.6 MW each) of distributed energy storage systems, above and beyond the 1,325 MW target for energy storage (CPUC 2021b).

4.6.2.2.2.2 Energy-Efficient Building Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings specified in Title 24, Part 6 of the California Code of Regulations include requirements for non-residential building lighting, insulation, ventilation, and mechanical systems (CEC 2018). Its provisions would be relevant to the Project's proposed operation and maintenance (O&M) building.

The California Green Building Standards Code (CALGreen, Title 24 Part 11) is a statewide regulatory code for all buildings. CALGreen is intended to encourage more sustainable and environmentally friendly building practices, require use of low-pollution emitting substances that

cause less harm to the environment, conserve natural resources, and promote the use of energy-efficient materials and equipment (CBSC 2019).

4.6.2.3 Local

4.6.2.3.1 Colusa County General Plan

The Project site is not located within the jurisdiction of a community plan, specific plan, or regional plan as identified by the Colusa County General Plan. General Plan policies that are relevant to the Project include:

> ***Policy AG 1-2:*** Lands designated for agricultural use shall remain designated for agriculture and not be rezoned or redesignated to an urban use unless all of the following criteria are met:
>
> a. The lot(s) for which conversions is requested is adjacent to agriculture or agricultural support uses (e.g., receiving plants, hulling plants, warehousing, trucking, distribution, and other related activities)
>
> b. Conversion will not be detrimental to existing agricultural operations
>
> c. The conversion land is within 500 feet of existing urban infrastructure (e.g., water supply lines and sewer lines) and conversion will constitute a logical contiguous extension of designated urban area
>
> d. The lot(s) proposed for conversion include a buffer at the agricultural/urban transition zone to protect future users of conservation lands from nuisances associated with typical agricultural practices
>
> e. No feasible alternative location (e.g., non-agricultural lands or less productive agricultural lands) exists
>
> f. The use would not have a significant adverse effect on existing or potential agricultural activities on surrounding
>
> ***Policy AG 2-5:*** Encourage and support the development of new agricultural related industries featuring alternative energy, utilization of agricultural waste, biofuels, and solar or wind farms.
>
> ***Policy LU 2-11****:* Develop accommodations for the development of large-scale commercial energy production, such as solar, on agricultural parcels. Such parcels shall require the following:
>
> - A use permit
> - An energy production overlay zone
> - Detailed and rigorous site planning and development
>
> Such projects shall only be located on agricultural parcels with marginal or poor farmland. Prime farmlands are not appropriate for this type of development

4.6.2.3.2 Zoning Ordinance

The Project site is located in Colusa County's Foothill Agriculture (F-A) and Exclusive Agriculture (E-A) zones (Colusa County 2014). The Colusa County Zoning Code addresses allowable uses in E-A and F-A zoning districts, which allow energy generation for off-site use with a Use Permit

or a Minor Use Permit with an EP Overlay Zone. Based on consultation with the County, the Applicant is pursuing a Use Permit for the Project.

4.6.3 Thresholds of significance

A project would result in significant impacts to energy resources if it would:

a) *Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or*

b) *Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.*

4.6.4 Impact Analysis

IMPACT 4.6-1: Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? (**Less than Significant Impact)**

Construction and Decommissioning

Construction equipment would comply with federal, state, and regional requirements where applicable. With respect to truck fleet operators, the U.S. Environmental Protection Agency (USEPA) and National Highway Traffic Safety Administration have adopted fuel efficiency standards for medium- and heavy-duty trucks. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type. USEPA and National Highway Traffic Safety Administration also adopted the Phase 2 heavy-duty truck standards, which cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline depending on the compliance year and vehicle type. These regulations would have an overall beneficial effect on reducing fuel consumption from trucks over time as older trucks are replaced with newer models that meet the standards.

In addition, construction equipment and trucks are required to comply with California Air Resources Board regulations regarding heavy-duty truck idling limits of five minutes at a location and the phase-in of off-road emission standards that result in an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines. These regulations are intended to reduce criteria pollutant emissions; however, compliance with the anti-idling and emissions regulations would also result in the efficient use of construction-related energy.

Operations

The Project would assist the state of California in achieving or exceeding its RPS and GHG emissions reduction objectives by developing and constructing a new California RPS-qualified 80 MW solar power generating facility.

The O&M building proposed on the modified Project site would be subject to the Building Energy Efficiency Standards as required by the California Code of Regulations, Title 24, Part 6. The Building Energy Efficiency Standards are intended to save energy, increase electricity supply

reliability, and avoid the need to construct new power plants. Pursuant to the California Building Standards Code and the Energy Efficiency Standards, the County would review the design components of the Project's energy conservation measures when the Project's building plans are submitted. These measures could include: insulation; use of energy-efficient heating, ventilation, and air conditioning equipment; solar-reflective roofing materials; energy-efficient indoor and outdoor lighting systems; reclamation of heat rejection from refrigeration equipment to generate hot water; incorporation of skylights; and other measures. The modified Project would also be subject to CALGreen, which requires 65 percent construction solid waste diversion.

The proposed modified Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation.

Mitigation: None required.

IMPACT 4.6-2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency? **(No Impact)**

The proposed modified Project would assist the state of California in achieving or exceeding its RPS and GHG emissions reduction objectives by developing and constructing a new California RPS-qualified 80 MW solar power generating facility. The Project would produce and transmit electricity at a competitive cost and provide a new source of energy storage that assists the state in achieving or exceeding its energy storage mandates. The Project would not conflict or obstruct with a state or local plan for renewable energy or energy efficiency.

Mitigation: None required.

4.6.5 PG&E Cortina Substation

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina Substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements made would be within the existing Cortina Substation footprint and would improve energy usage through substation efficiency. Thus, the improvements would not be wasteful or cause unnecessary usage of energy. Additionally, the PG&E improvements would not conflict with any plans or policies for renewable energy or energy efficiency. Therefore, the improvements would have no impact on energy usage. No mitigation would be required.

4.6.6 Cumulative Impacts

There would be no impact with respect to conflicts with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, the Project would not cause or contribute to any potential significant cumulative impact related to these conflicts.

The Project would use energy resources during construction, O&M, and decommissioning; therefore, it could contribute to potential cumulative impacts during any of these phases.

The Project would provide an additional source of renewable energy and would improve grid reliability that could serve the cumulative demand, such that the Project would not contribute to or worsen an existing significant adverse condition. The Project would assist California utilities in meeting their obligations under state energy storage targets and the California Public Utilities Commission's energy storage program. No significant adverse cumulative effect would result relating to electricity use; instead, a beneficial cumulative impact on energy resources would result.

The geographic context for potential cumulative impacts related to vehicle fuel use is within the Project's construction equipment delivery and workers' average travel radius (assumed to be up to 64 miles for workers and up to 118 miles for materials), since these are the areas within which energy resources would be demanded and supplied for the Project.

There is no existing significant adverse condition of fuel use (such as a shortage) to which the Project would contribute or worsen. Past, present, and reasonably foreseeable future projects within approximately 64 to 118 miles of the Project site could require gasoline or diesel but would not combine with the fuel demands of the Project to cause a significant adverse cumulative impact relating to the wasteful, inefficient, or unnecessary consumption or use of fuel. In the event of a future shortage, higher fuel prices would reduce trips that could be termed "wasteful" and would moderate choices regarding vehicles, equipment, and fuel efficiency. The Project's less-than-significant impact relating to wasteful, inefficient, or unnecessary consumption or use of fuel would not be cumulatively considerable.

4.6.7 References

California Department of Tax and Fee Administration (CDTFA). 2021a. *Net Taxable Gasoline Gallons, Including Aviation Gasoline.* Available online: https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm. Accessed May 2021.

CDTFA. 2021b. *Taxable Diesel Gallons 10 Year Report.* Available online: https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm. Accessed May 2021.

CEC. 2018. 2019 Nonresidential Compliance Manual for the 2019 Building Energy Efficiency Standards, Title 24, Part 6, and Associated Administrative Regulations in Part 1, December 2018. Available online: https://ww2.energy.ca.gov/2018publications/CEC-400-2018-018/Compliance_Manual-Complete_without_forms.pdf. Accessed May 2021.

CEC. 2020. Gas Consumption by County, Colusa. https://ecdms.energy.ca.gov/gasbycounty.aspx. Accessed March 2021

CEC. 2021a. 2019 Total System Electric Generation. Available online: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2019-total-system-electric-generation. Accessed March 2021.

CEC. 2021b. Oil Supply Sources to California Refineries. Available online: https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/oil-supply-sources-california-refineries. Accessed March 2021.

CEC. 2021c. California Energy Consumption Database. Available online: https://ecdms.energy.ca.gov/. Accessed July 2021.

CEC. 2021d. Electricity Consumption by Entity. https://ecdms.energy.ca.gov/elecbyutil.aspx. Access July 2021

California Public Utilities Commission (CPUC). 2021a. RPS Program Overview. Available online: https://www.cpuc.ca.gov/RPS_Overview/. Accessed March 2021.

CPUC. 2021b. Energy Storage. Available online: https://www.cpuc.ca.gov/energystorage/. Accessed March 2021.

Colusa County. 2014. Colusa County Zoning Code.

Pacific Gas and Electric Company (PG&E). 2021a. 2020 Joint Annual Report to Shareholders, February 25, 2021. Available online: https://s1.q4cdn.com/880135780/files/doc_financials/2020/ar/PCG012AR_2020_AR_Web.pdf. Accessed March 2021.

PG&E. 2021b. Economic Development Site Tool, Electric Transmission Lines Map. Available online: https://www.pge.com/en_US/large-business/services/economic-development/opportunities/sitetool.page. Accessed July.

U.S. Energy Information Administration (EIA). 2021a. California State Energy Profile, February 18, 2021. Available online: https://www.eia.gov/state/print.php?sid=CA. Accessed March 2021.

EIA. 2021b. Units and calculators explained, British thermal units (Btu), June 4, 2020. Available online: https://www.eia.gov/energyexplained/units-and-calculators/british-thermal-units.php. Accessed March 2021.

4.7 GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES

This section identifies and evaluates issues related to Geology, Soils, and Paleontological Resources in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received no scoping comments regarding Geology, Soils, and Paleontological Resources.

4.7.1 Existing Conditions

4.7.1.1 Regional Geology

The Central Valley of California is classified as the Great Valley geomorphic province. This province is a long (approximately 450 miles) and comparatively narrow lowland (with a width averaging about 50 miles) that has a central drainage outlet through Suisun Bay and into San Francisco Bay. The northern half of the province (the Sacramento Valley) and the southern half (the San Joaquin Valley) meet at the Sacramento-San Joaquin Delta, which is tidally influenced and therefore essentially at sea level.

The Great Valley geomorphic province is a mostly intact (i.e., with limited deformation in the central areas), asymmetric structural trough that has been filled with two thick sequences of sediment deposits that range in age back to the Jurassic period: the Mesozoic Great Valley Sequence and the Cenozoic Great Valley fill. The Sacramento Valley portion of this geomorphic province is bounded on the west by the Coast Ranges, on the east by the Sierra Nevada Mountains, and to the north by the Klamath Mountains. The southern end is the Sacramento-San Joaquin Delta. The thickest sequence of Mesozoic age sediment (roughly between 66 and 250 million years ago) occurs in the southern end of the Sacramento Valley, and on the western side, within approximately 25 miles of the Project site (Hackel 1966; Irwin 1990). The Cenozoic deposits generally thin to the west toward the Coast Ranges whereas the Great Valley sequence becomes exposed to the west where it has been uplifted (Coast Ranges) and eroded, and alluvial fans have developed.

4.7.1.2 Local Geology

Because the Great Valley is a depositional trough, most of the local geologic formations in the Project area are sedimentary rocks, formed from alluvial deposits into either marine or non-marine environments. These sediments are deposited on a basement of Franciscan Formation rocks to the west (including igneous, sedimentary, and metamorphic rocks) and Sierran Formation rocks on the east side (mostly igneous, granitic rock). The contact between the two basement formations is concealed underneath the Great Valley deposits. Even though it is not visible, it is presumed to be a subduction zone or fault-related contact. Much of the Great Valley had active tectonism throughout the Cenozoic, creating unconformities among sedimentary units. Deposition in much of the center of the Great Valley appears to provide an unbroken record through the Cenozoic. Along the margins of the Great Valley, deposition appears to have been frequently disrupted by tectonic activity and erosion (Norris and Web 1990).

Geologic mapping of the Sacramento Valley has been documented by a number of researchers, including Irwin (1960), Jennings and Strand (1960), Helley and Harwood (1985), and Jennings, et al. (2010). The more current interpretations of the local geology of the Project area have not

changed significantly over the past several decades, having the Project site located in an area underlain by consolidated alluvium (Tehama Formation) with an age of Pliocene to Pleistocene. East of the Project site on the floor of the Sacramento Valley the underlying materials are primarily the youngest alluvial sediments, Quaternary age, unconsolidated to semi-consolidated, and mostly non-marine (Q). The Project site sits on older materials (QPc), Pliocene to Pleistocene in age, slightly more consolidated than the younger materials, and deposited into both non-marine and marine environments. These sedimentary materials have been exposed due to uplift of the Coast Ranges to the west, and subsequent erosion of the overlying, younger materials. West of the Project includes exposures of yet older sedimentary materials (Ku, Kl, KJf, and J), with ages from Cretaceous to Jurassic, and exhibiting greater consolidation of materials. Topographically these older sedimentary formations are found at higher elevations than the Project site, which also resulted from the Coast Range orogeny. One of the primary causes of the Coast Range uplift is plate tectonic activity along the Pacific Coast, and a significant marker of this activity is the intrusion of ultramafic plutonic rock, with associated metamorphic rock, which are ultimately exposed at the surface due to erosion. Such geologic materials are found to the west of the Project, and labeled as Mesozoic in age. The elevation across the Project ranges from 240 to 328 feet above median sea level.

4.7.1.3 Soils

The Project site is comprised of Pliocene terrace deposits of the Tehama Formation within the hilly higher elevation areas and Pleistocene to Holocene alluvial fan deposits in lower elevation areas (Rich 1971). The Tehama Formation is comprised of poorly sorted fluvial sediments, interbraided, noncontiguous layers of metamorphic pale green, gray, and tan sandstone siltstone, and clay with lenses of sand or gravel (pebble and cobble) (De Novo Planning Group 2010; Helley and Harwood 1985; Rich 1971). The Tehama Formation is exposed in some areas along the Coast Range foothills within the western portion of the Sacramento Valley and extends to depths of approximately 1,700 feet near the central portion of the Sacramento Valley (De Novo Planning Group 2010). The Tehama Formation is overlain by the younger alluvium in flat areas of the valley. According to the U.S. Department of Agriculture Web Soil Survey website (2021) soils across the Project site include:

- Ayar clay (approximately 50 precent) and Capay clay (approximately 23 percent) that are both comprised of clay loam and clay, and range between 0 to 64 inches in depth.
- Corning clay loam (approximately 16 percent) comprised of clay loam, clay, gravelly clay loam, and cobbly sandy clay loam and ranges between 0 to 60 inches in depth.
- Clear Lake clay (approximately 6 percent) comprised of clay and silty clay and ranges between 0 to 79 inches in depth.
- Corval loam (approximately 5 percent) primarily comprised of clay loam and silty clay loam and ranges between 0 to 70 inches in depth.

The gen-tie corridor is comprised of both the Pliocene terrace deposits along Spring Valley Road and younger alluvial fan deposits along Walnut Drive. According to the U.S. Department of Agriculture Web Soil Survey website (2021) soils across the gen-tie corridor include (from southwest to northeast):

- Corning consists of clay loam, clay, gravelly clay loam, and cobbly sandy clay loam, terrace slope and alluvium, and ranges between 0 to 60 inches in depth. Along southwestern most end of transmission line corridor along Spring Valley Road.
- Ayar clay comprised primarily of clay and lower levels of clay loam, formed from alluvium, and ranges between 0 to 79 inches in depth. Along majority of Spring Valley Road.
- Copay consists of clay loam and clay that formed in fine textured alluvium derived from mostly sandstone and shale and ranges between 0 to 64 inches in depth. Small segment at intersection of Spring Valley Road and Walnut Drive near Salt Creek.
- Hillgate loam consist of clay loam and clay formed in alluvium from mixed sources and ranges from 0 to 60 inches in depth. Along 90 percent of Walnut Drive.

4.7.1.4 Geologic Hazards

Seismicity

There are no known Holocene-active faults (faults that have evidence of displacement within the Holocene Epoch, or the last 11,700 years are considered active) or pre-Holocene faults (faults which have not shown evidence of displacement in the last 11,700 years) within the Project site (CGS 2010). However, there are multiple fault systems in the region, outside of the Project site (CGS 2010). The most significant of these fault systems, considering the proximity to the Project site, is the Resort fault zone.

Surface Fault Rupture
The Project site is not within nor does it intersect an established Alquist-Priolo Earthquake Fault Zone, as mapped by the State Geologist (CGS 2010). The nearest fault that has been designated an Earthquake Fault Zone (i.e., there is evidence of surface rupture sometime in the last 11,700 years), is the Resort Fault Zone (approximately 10 miles west of the Project site).

Seismic Ground Shaking
Ground shaking occurs due to a seismic event and can cause extensive damage to life and property and may affect areas hundreds of miles away from the earthquake's epicenter. The extent of the damage varies by event and is determined by several factors, including (but not limited to) magnitude and depth of the earthquake, distance from epicenter, duration and intensity of the shaking, underlying soil and rock types, and integrity of structures. The western Sacramento Valley region of California is seismically active and moderate to severe ground shaking in the vicinity of the Project site is expected.

In 2014, the United States Geological Survey and the California Geological Survey released the time-dependent version of the Uniform California Earthquake Rupture Forecast (UCERF III) model. The UCERF III results indicate that Colusa County has a low to moderate risk of earthquake occurrence (Colusa County 2018).

Liquefaction

Liquefaction is a phenomenon in which unconsolidated, water saturated sediments become unstable due to the effects of strong seismic shaking. During an earthquake, these sediments can behave like a liquid, potentially causing severe damage to overlying structures. Lateral spreading is a variety of minor landslides that occur when unconsolidated liquefiable material breaks and

spreads due to the effects of gravity, usually down gentle slopes. Liquefaction-induced lateral spreading is defined as the finite, lateral displacement of gently sloping ground as a result of pore-pressure buildup or liquefaction in a shallow underlying deposit during an earthquake. The occurrence of this phenomenon is dependent on many complex factors, including the intensity and duration of ground shaking, particle-size distribution, and density of the soil. Fine-grained, cohesive soils are anticipated at the Project site; therefore, the potential for liquefaction is expected to be low.

Landslides
Landslides occur when rock, soil, and other debris are displaced due to the effects of gravity. The potential for material to detach and move down slope depends on multiple factors including the soils, moisture content, and steepness of terrain. The Project site has flat topography with rolling hills. There are no mapped landslides on or around the site (DOC 2021). For these reasons, the potential for landslide hazards at the site is very low.

Subsidence
Land subsidence is the gradual settling or sudden sinking of the earth's surface due to subsurface movement of earth materials (USGS 1999). Compaction of subsurface water-containing geologic layers is the primary cause of land subsidence (USGS 1999). Regional ground subsidence typically is caused by compaction of sub-surface water as a result of mining or groundwater withdrawal. Subsidence has been documented in some areas of the Sacramento Valley. In the Sacramento/San Joaquin Delta, subsidence has been associated with the drainage of organic soils and sediment compaction, which has been exacerbated by biological oxidation and extreme desiccation. Minimal subsidence locations in the County have been reported with risk primarily coinciding with groundwater pumping areas in the southwest portion of the County (Colusa County 2018).

4.7.1.5 Paleontological Resources
Paleontological resources are the fossilized remains of plants and animals, including vertebrates (animals with backbones), invertebrates (animals without backbones), and microscopic plants and animals (microfossils), and can include mineralized body parts, body impressions, or footprints and burrows. They are valuable, non-renewable, scientific resources used to document the existence of extinct life forms and to reconstruct the environments in which they lived. Fossils can be used to determine the relative ages of the depositional layers in which they occur and of the geologic events that created those deposits. The age, abundance, and distribution of fossils depend on the geologic formation in which they occur and the topography of the area in which they are exposed. The geologic environments within which plants or animals became fossilized usually were quite different from the present environments in which the geologic formations exist.

Tetra Tech prepared a Technical Memorandum that evaluates the potential for paleontological resources to occur at the Project site and along the gen-tie corridor and provides recommendations for management options based on the sensitivity of such resources (Appendix F). The Technical Memorandum also examines the known geologic formations that are mapped within the Project site and surrounding area, both at the surface and in the subsurface, and determines the likelihood for encountering paleontological resources. The Technical Memorandum includes a review of published geologic maps, literature, aerial imagery relevant to the Project area, and a summary of a records search performed by the University of California Museum of Paleontology (UCMP 2021) fossil locality database.

Tetra Tech applied the Bureau of Land Management's Potential Fossil Yield Classification (PFYC) System to the geologic units at the Project site to provide a paleontological potential rating to these units. The Plio-Pleistocene alluvium (QPc) within the Project site has been assessed as PFYC-3a, which indicates a moderate paleontological potential. The local geologic unit that stratigraphically underlies the QPc surface unit is Cretaceous sedimentary rock (Ku), which also is considered to have moderate (though little known) paleontological sensitivity (PFYC-3b) (Appendix F).

The majority of the gen-tie corridor also occurs on the QPc unit with moderate paleontological potential; however, portions of the gen-tie corridor occur on Quaternary alluvium (Q) or Older alluvium (Qoa), as shown in Figure 4.7-1, and these units present a smaller probability of encountering fossils. The Pleistocene- to Holocene-aged sediments of Quaternary alluvium (Q) are too young to contain scientifically significant paleontological resources and therefore are considered to have low paleontological sensitivity (PFYC-2).

A fossil locality database record search was performed by the University of California Museum of Paleontology (UCMP 2021) to determine whether there are any fossil localities present at the Project site. No fossil localities were identified during the search. However, two were within 5 miles of the Project; one is an invertebrate fossil and the other a vertebrate fossil. The invertebrate locality is about 3 miles to the northwest of the Project area and was found in Cretaceous rock (Ku) along Freshwater Creek Road. The latter locality is approximately 4 miles southeast of the Project area along Cortina Creek. This vertebrate fossil identified in the Pliocene-Pleistocene age Tehama Formation (QPc), the same materials underlying the Project site.

4.7.2 Regulatory Setting

4.7.2.1 Federal

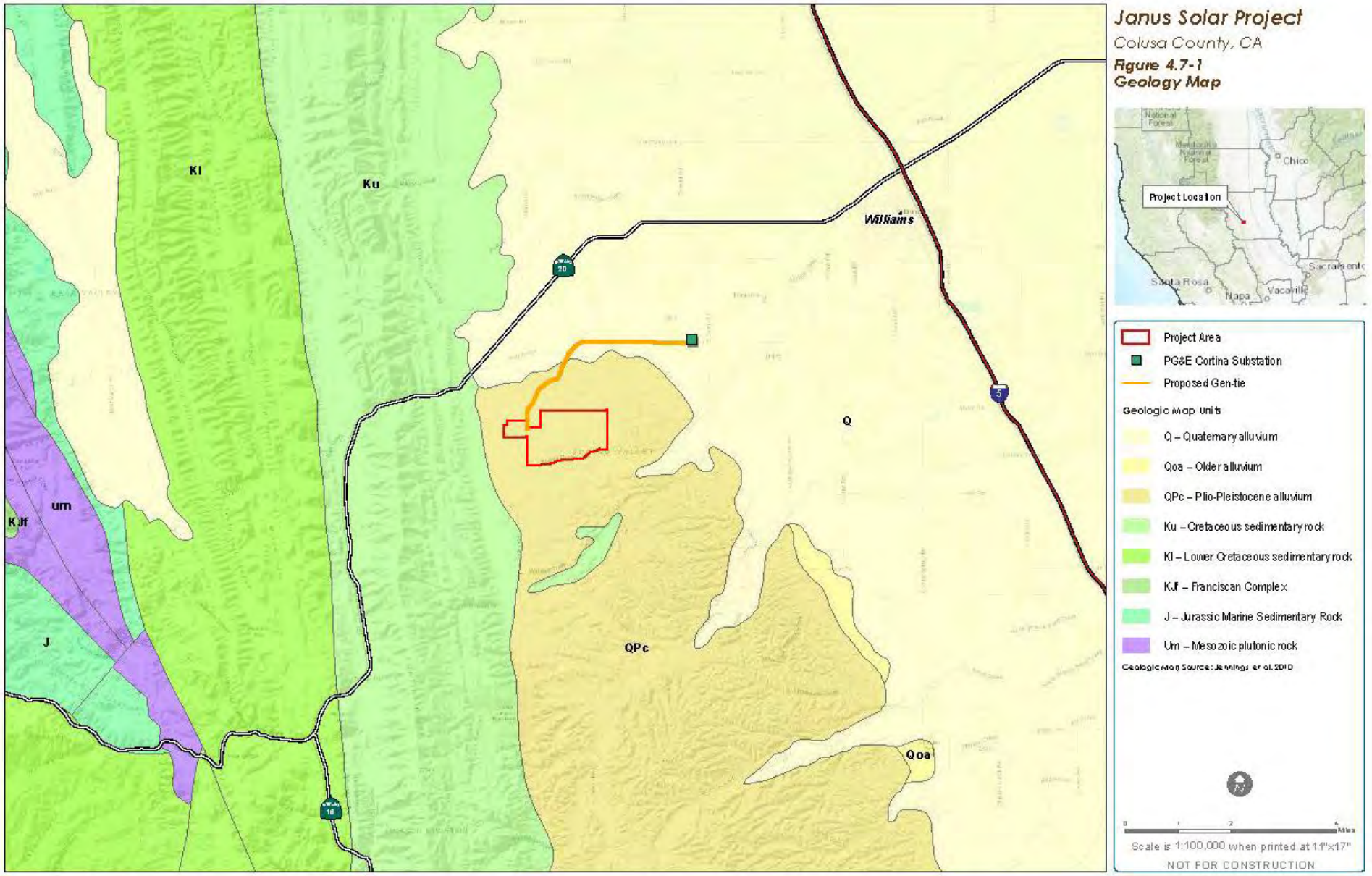
Earthquake Hazards Reduction Act

The United States Congress passed the Earthquake Hazards Reduction Act in 1977 to reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards reduction program. To accomplish this goal, the act established the National Earthquake Hazards Reduction Program. This program was substantially amended in November 1990 by the National Earthquake Hazards Reduction Program Act, which refined the description of agency responsibilities, program goals, and objectives.

4.7.2.2 State

California Building Code

The California Building Code (CBC), which is codified in Title 24 of the California Code of Regulations, Part 2, establishes minimum standards related to structural strength, means of egress to facilities (entering and exiting), and general stability of buildings. The purpose of the CBC is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. The provisions of the CBC apply to the construction, alteration, movement, replacement, repair, location, maintenance, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures throughout California and would apply to structures proposed on the Project site.


Janus Solar Project
Colusa County, CA
Figure 4.7-1
Geology Map
Project Location
Chico
Sacramento
Santa Rosa
Napa
Vacaville
Williams
Kl
Ku
Q
QPc
Qoa
KJf
um
J
Project Area
PG&E Cortina Substation
Proposed Gen-tie
Geologic Map Units
Q – Quaternary alluvium
Qoa – Older alluvium
QPc – Plio-Pleistocene alluvium
Ku – Cretaceous sedimentary rock
Kl – Lower Cretaceous sedimentary rock
KJf – Franciscan Complex
J – Jurassic Marine Sedimentary Rock
Um – Mesozoic plutonic rock
Geologic Map Source: Jennings et al. 2010
Scale is 1:100,000 when printed at 11"x17"
NOT FOR CONSTRUCTION

Relevant to the Project, Chapter 18 of the CBC covers the requirements of geotechnical investigations, including expansive soils (§1803); excavation, grading, and fills (§1804); load-bearing of soils (§1806); as well as foundations (§1808), shallow foundations (§1809), and deep foundations (§1810). Chapter 18 requires analysis of slope instability, liquefaction, and surface rupture attributable to faulting or lateral spreading, plus an evaluation of lateral pressures on basement and retaining walls, liquefaction and soil strength loss, and lateral movement or reduction in foundation soil-bearing capacity. It also addresses mitigation measures to be considered in structural design, which may include ground stabilization, selecting appropriate foundation type and depths, selecting appropriate structural systems to accommodate anticipated displacements, or any combination of these measures. The potential for liquefaction and soil strength loss must be evaluated for site-specific peak ground acceleration magnitudes and source characteristics consistent with the design earthquake ground motions.

If a project is approved, then the project proponent would prepare a site-specific, design-level geotechnical report with recommendations for final project design. The design-level geotechnical report would include the results and recommendations of the preliminary geotechnical report and add further detail if needed to address the final project design and relevant mitigation measures identified in the California Environmental Quality Act (CEQA) document, conditions of approval or other agency requirements.

National Pollutant Discharge Elimination System (NPDES) Construction General Permit
Project construction would disturb 1 acre or more of land surface and could affect the quality of stormwater discharges into waters of the U.S.; therefore, it would be subject to the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). See Section 4.10, *Hydrology and Water Quality*, for additional details.

California Public Utilities Commission General Order 95
California Public Utilities Commission General Order 95 applies to construction and reconstruction of overhead and underground electric lines in California, including those proposed as part of the Project. Design of transmission lines must adhere to the National Electric Safety Code. Guidance documents are published by the Institute of Electrical and Electronics Engineers and American Society of Civil Engineers, including ASCE 74, Guidelines for Electrical Transmission Line Structural Loading, which states, “Transmission structures are not typically designed for vibration caused by earthquakes because these loads are less than that of wind/ice combinations.” The exception to this general rule occurs if the tower is built in liquefiable materials, in which case the materials may not support the weight of the tower and tower foundation during a seismic event.

4.7.2.2.1 Local

The Colusa County General Plan (in accordance with Government Code §65300 et seq.) identifies the County’s vision for the future and provides a framework to guide decisions on growth, development, and conservation of open space and resources (Colusa County 2012). The County’s policies regarding geology, soils, and paleontological resources are provided in the Safety and Conservation Elements are listed below:

> ***Policy SA 1-9:*** Except as otherwise allowed by Federal or State law, require new buildings intended for human use to be designed in compliance with the latest edition of the

California Building Standards Code, California Fire Code, and other adopted standards based on potential risks.

Policy SA 1-13: Require site investigations in areas planned for new development to determine susceptibility to landslides, subsidence/settlement, contamination, fire, and/or flooding.

Policy SA 1-14: Require new land development proposals to avoid unreasonable exposure to geologic hazards, including earthquake damage, subsidence, liquefaction and expansive soils.

Policy SA 1-15: All development and construction proposals shall be reviewed by the County to ensure conformance with applicable building standards.

Policy SA 1-21: All projects subject to CEQA review shall address seismic safety issues and provide adequate mitigation for existing and potential hazards identified.

Policy CON-3: If construction or grading activities result in the discovery of significant historic or prehistoric archaeological artifacts or unique paleontological resources, all work within 100 feet of the discovery shall cease, the County Department of Planning and Building shall be notified, the resources shall be examined by a qualified archaeologist, paleontologist, or historian for appropriate protection and preservation measures; and work may only resume when appropriate protections are in place and have been approved by the County Department of Planning and Building.

4.7.3 Thresholds of Significance

A project would result in significant impacts to geology, soils, and paleontological resources if it would:

a) *Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:*
    i. *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42),*
    ii. *Strong seismic ground shaking,*
    iii. *Seismic-related ground failure, including liquefaction,*
    iv. *Landslides;*
b) *Result in substantial soil erosion or 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; or*

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

4.7.4 Impacts Analysis

IMPACT 4.4-1: *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 or strong seismic ground shaking? Seismic-related ground failure, including liquefaction? Landslides?* **(Less than Significant Impact)**

Known Faults and Strong Seismic Ground-Shaking

The Project site does not lie within any mapped earthquake fault zones according to the available data. Although the area could be affected by earthquakes or seismic ground shaking, there are no current data available indicating the presence of Holocene-active faults within the Project site. The nearest earthquake fault zones to the Project site are the Resort and Willows fault zones. The Project does not include any habitable structures and would not expose people or structures to potential substantial adverse effects associated with rupture of a known earthquake fault. There would be no impact related to surface fault rupture during Project construction, operation and maintenance, or decommissioning.

The Project site potentially is subject to moderate to severe seismic ground shaking due to the proximity to the Resort and Willows fault zones. Should strong seismic ground shaking occur at the Project site, damage to the PV solar arrays, the O&M building, or other ancillary facilities could result in potential damage and/or injury to on-site staff.

The Project would be subject to the seismic design criteria of the CBC, which requires that all improvements be constructed to withstand any anticipated ground shaking from regional fault sources and require that the Project owner retain a licensed geotechnical engineer to design the Project components to withstand probable seismically-induced ground shaking. All construction on-site would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would comply with the seismic recommendations of a California-registered, professional geotechnical engineer in accordance with the CBC. The final structural design would be subject to approval and follow-up inspection by the Colusa County Building Division. Final design requirements would be provided to the on-site construction supervisor and the Colusa County Building Inspector to ensure compliance. Adherence to the applicable CBC requirements and local agency enforcement would ensure that the Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Therefore, impacts related to ground shaking during Project construction, O&M, or decommissioning would be less than significant.

Seismic-Related Ground Failure and Liquefaction

The Project site may be subject to moderate-to-strong seismic ground shaking in the event of an earthquake in the area; however, the risk of liquefaction is low to moderate because fine-grained, cohesive soils are present at the Project site.

The Project owner is required to design proposed improvements in accordance with applicable CBC seismic design standards and as recommended by a California-registered professional geotechnical engineer in the site-specific geotechnical review. As part of the geotechnical report, consistent with building code seismic design standards, the licensed geotechnical engineer would be required to consider potential liquefaction in the design plans.

Compliance with CBC requirements, including implementation of recommendations provided in the geotechnical report, and local agency enforcement would reduce or avoid impacts related to ground failure, including liquefaction. Project construction, O&M, and decommissioning would not directly or indirectly cause adverse effects related to ground failure, including liquefaction, and the impact would be less than significant.

Landslides

The Project site has flat topography with rolling hills. There are no mapped landslides on or around the site (DOC 2021). For these reasons, the potential for landslide hazards at the site is very low, and there would be no impact from landslides to Project construction, O&M, or decommissioning.

IMPACT 4.4-2: *Would the project result in substantial soil erosion or loss of topsoil?* **(Less than Significant Impact)**

The Project is proposed on relatively flat topography and would not involve grading steep slopes; however, construction activities could result in erosion and sediment transport during excavation, grading, trenching, and soil stockpiling if these activities are not managed to reduce soil erosion and loss of topsoil. Because the Project's ground-disturbing activities would exceed 1 acre during construction, the Project would be required to comply with the Construction General Permit described above in Section 4.7.2, *Regulatory Setting*, and discussed further in Section 4.10, *Hydrology and Water Quality*.

The Construction General Permit was developed to ensure that stormwater is managed to protect water quality and includes erosion control measures for construction sites as well as post-construction requirements. The Construction General Permit requires preparation and implementation of a stormwater pollution prevention plan (SWPPP) that identifies best management practices (BMPs) to control stormwater from construction work sites and to prevent off-site transport of disturbed soils. The BMPs may include, but are not limited to, physical barriers to prevent erosion and sedimentation; limitations on work periods during storm events; protection of stockpiled materials; and other measures identified by a qualified SWPPP preparer that would substantially reduce or prevent erosion from occurring during construction. Given the relatively flat topography of the Project site, and through compliance with these independently enforceable existing requirements, the potential impacts of the Project associated with soil erosion and loss of topsoil during construction would be less than significant.

Large-scale ground-disturbing activities are not anticipated to occur during operations. The amount of soil disturbance during decommissioning would be similar to that created during Project construction, and similarly could increase the risk of erosion or sediment transport. Without appropriate stormwater control measures, the potential impact could be significant. However, as decommissioning would also disturb more than 1 acre, it would be covered under the Construction General Permit, and the Project owner would be required to prepare and implement a SWPPP with BMPs, similar to the SWPPP that would be implemented during construction. The

implementation of the SWPPP during decommissioning would reduce the impacts of soil erosion during decommissioning to less than significant.

IMPACT 4.4-3*: 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?* **(Less than Significant Impact)**

Refer also to Impact 4.4-1, above. As previously discussed, there would be a less than significant impact related to liquefaction, landslide, or other seismic-related ground failure. The area is gently sloping with no evidence of landslides, and the consolidated sediments underlying the Project site would be unlikely to destabilize during Project construction, O&M, or decommissioning. Proper placement and compaction of backfill and adherence to CBC guidelines would minimize the risk of unstable soil conditions at the site.

IMPACT 4.4-4: *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?* **(Less than Significant Impact)**

According to the Natural Resources Conservation Service Web Soil Survey data, the soil underlying the Project site has a moderate to very high expansion potential (USDA 2021). The Project design and construction activities would be required to comply with CBC requirements and would employ standard engineering and building practices common to construction projects throughout California (e.g., soil removal and replacement with engineered soil or treatment of expansive soils). The potential impacts to life or property associated with expansive soils would be less than significant when addressed appropriately according to these requirements.

The required design-level geotechnical investigation would identify any expansive soils within the Project site and specific requirements to ensure that all foundations and other below-ground infrastructure would not be adversely affected by expansive soils. Adherence to design requirements consistent with the most updated version of the CBC and site-specific geotechnical report would ensure a less than significant impact related to expansive soils.

IMPACT 4.4-5: *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?* **(Less than Significant Impact)**

The Project would use portable toilets on-site during construction, and operation and maintenance. Sanitary waste is expected to average up to 30 gallons per day. Waste disposal would occur at a permitted off-site facility equipped to handle sanitary waste. Thus, a septic tank system would not be required on the Project site.

The Project would not introduce an environmental or public health hazard by building septic tanks or other wastewater disposal systems in soils that are incapable of adequately supporting such systems. There would be a less than significant impact related to inadequate soils supporting an on-site septic system.

IMPACT 4.4-6: *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?* **(Less than Significant Impact with Mitigation Incorporated)**

The surface geologic unit mapped within the Project site is Plio-Pleistocene alluvium (QPc). This unit is assessed as having moderate paleontological sensitivity and therefore, a moderate probability of containing fossils. The local geologic unit that stratigraphically underlies the QPc surface unit is Cretaceous sedimentary rock (Ku), which also is considered to have moderate (though little known) paleontological sensitivity. This unit has contained fossils at other locations, including one that is only 3 miles from the Project.

Project-related excavation to install the steel supports for the solar panels may occur at depths of up to 10 feet below ground surface. Soils up to this depth also may be disturbed during Project decommissioning. Only the upper of these two units (QPc) is likely to be impacted by Project activities, because excavations and other surface penetrating actions are not expected to be deep enough to reach the older unit. However, since both the QPc and Ku units have similar sensitivity classifications, the potential for encountering fossils with ground-disturbing activities is assumed to be moderate, and a potentially significant impact could result if paleontological resources are encountered and inadvertently destroyed during ground-disturbing activities. With the implementation of Mitigation Measure **GEO-1** requiring worker training and implementation of a contingency protocol in the case of an inadvertent find, the impact would be less than significant.

4.7.5 Mitigation Measures

The following mitigation measures are recommended to reduce significant impacts to biological resources.

GEO-1: Paleontological Worker Education and Awareness Program (WEAP): Before starting construction activities, on-site personnel should be trained in basic recognition of fossils and appropriate procedures to notify management in order to engage a qualified paleontological specialist in the event that fossils are discovered during construction activities (an unanticipated find).

GEO-2: Unanticipated Find Contingency: A qualified paleontological specialist, meeting the Secretary of the Interior's Professional Qualification Standards for the Society of Vertebrate Paleontology shall be retained by the Project Owner on an on-call status, to be brought on-site to evaluate the significance of any unanticipated discovery of paleontological resources (an unanticipated find) and determine if additional study is warranted. If the significance of the find under CEQA or California Public Resources Code, Section 21082 does not warrant such study, the qualified paleontologist may decide to record the find and allow work to continue. If the discovery proves significant under CEQA, preparation of a paleontological treatment plan, testing, or data recovery may be required at the discretion of the paleontological specialist.

4.7.6 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements made would be within the existing Cortina Substation footprint.

The construction activities associated with the PG&E infrastructure would be required to comply with, and adhere to, the same design criteria included in the CBC as the rest of the Project components. Construction would be required to comply with requirements of the construction general permit, similar to the Project components evaluated above, including implementation of BMPs during construction activities. Subsurface excavation required for the PG&E infrastructure is not anticipated to occur at depths below 10 feet below ground surface. Nonetheless, because fossils could be discovered up to 10 feet, the implementation of mitigation for unanticipated fossil discovery would reduce the potential significance of any unanticipated fossil discoveries to a less-than-significant level.

Through the implementation of **Mitigation Measures GEO-1** and **GEO-2** these improvements would not have a substantial adverse effect on any geology, soils, or paleontological resources, and no additional mitigation measures would be required.

4.7.7 Cumulative Impacts

Impacts related to geology, soils, and seismicity tend to be site-specific and depend on the local geology and soil conditions. For these reasons, the geographic scope for potential cumulative impacts consists of the Project site and adjacent areas. No cumulative projects, as identified in Table 2-1 are adjacent to the Project. Additionally, the Project would be designed and constructed in accordance with the most current building code requirements, and the potential for the Project to exacerbate seismic hazards would be less than significant. State and local building regulations and standards have been established to address and reduce the potential for projects to cause or exacerbate seismic hazard impacts. All projects would be required to comply with applicable provisions of these laws and regulations. Compliance with these requirements would limit the potential for impacts to a less than significant level. The purpose of the CBC (and related local ordinances) is to regulate and control the design, construction, quality of materials, use/occupancy, location, and maintenance of all buildings and structures within its jurisdiction. Based on compliance with these requirements, the incremental impacts of the Project combined with impacts of other projects in the area would not combine to cause a significant cumulative impact related to seismic hazards.

Individual projects, including the Project, are required to comply with existing codes, standards, and permitting requirements (e.g., preparation of a SWPPP under the state construction general permit) to reduce erosion impacts. Potential Project-related impacts to soil erosion and loss of topsoil would be reduced through the implementation of the BMPs identified in the SWPPP. Requirements in the state construction general permit are designed to reduce adverse cumulative effects of construction-phase erosion. Individual projects' compliance with stormwater control requirements would reduce the overall cumulative impact to a less than significant level.

The geographic scope of cumulative impacts to paleontological resources includes the Project site and adjacent areas where Pleistocene-age deposits could be disturbed. If there were paleontological resources that extended across areas of ground disturbance of the proposed Project and cumulative projects, the projects could result in the loss of paleontological resources, a potentially significant impact. However, with implementation of Mitigation Measures **GEO-1** and **GEO-2**, the proposed Project would have a less than significant impact relating to the potential loss of paleontological resources in the event of inadvertent discovery during construction. This

less than significant impact would not be cumulatively considerable because work would be halted immediately in the event of a find, thereby minimizing the potential impact.

4.7.8 References

California Geologic Society (CGS). 2010. Fault Activity Map of California. Map.

Colusa County. 2012. Colusa County General Plan. Adopted July 31, 2012.

Colusa County. 2018. Local Hazard Mitigation Plan Update. December.

De Novo Planning Group. 2010. Colusa County General Plan Update, Background Information, June 2010. Available online at: http://www.countyofcolusageneralplan.org/sites/default/files/Colusa%20Background%20Report_Complete_no%20figures.pdf. Accessed January 2021.

Department of Conservation (DOC). 2021. Landslide Inventory. Available online at: https://maps.conservation.ca.gov/cgs/lsi/app/. Accessed July 2021.

Hackel, O. 1966. Summary of the Geology of the Great Valley. In Bailey. E.H., Editor, Geology of Northern California, California Division of Mines and Geology Bulletin 190.

Helley, E. J. and Harwood, D. S. 1985. Geologic map of late Cenozoic deposits of the Sacramento Valley and northern Sierran foothills, California: U.S. Geological Survey Miscellaneous Field Studies Map MF-1790, 5 plates, scale 1:62,500, 1 pamphlet, 24 p. [http://pubs.usgs.gov/mf/1985/ 1790/].

Irwin, W. P. 1960. Geologic Reconnaissance of the northern Coast Ranges and Klamath Mountains, California, with a summary of the mineral resources: California Division of Mines Bulletin 179, Plate 1, Geologic map of northwestern California, scale 1:500,000.

Irwin, William P. 1990. "Geology and plate-tectonic development". In Robert E. Wallace (ed.). The San Andreas Fault System, California (PDF). U.S. Geological Survey Professional Paper 1515. pp. 61–82.

Jennings, C. W. and Strand, R. G. 1960. Geologic Map of California, Olaf P. Jenkins Edition, Ukiah Sheet. 1:250,000. California Geological Survey. Available online at: https://www.conservation.ca.gov/cgs/maps-data/rgm.

Jennings, C.W., with modifications by Gutierrez, C., Bryant, W., Saucedo, G., and Wills, C. 2010. Geologic map of California: California Geological Survey, Geologic Data Map No. 2, scale 1:750,000. Available online at: https://www.conservation.ca.gov/cgs/maps-data/rgm.

Norris, R. M., and Webb, R.W. 1990. Geology of California. 2d ed. New York: John Wiley & Sons.

Rich, E. I. 1971. *Geological Map of the Wilbur Springs Quadrangle, Colusa and Lake Counties*. U.S. Geological Survey. Available online at: https://ngmdb.usgs.gov/Prodesc/proddesc_444.htm. Accessed January 2021.

University of California Museum of Paleontology (UCMP). 2021. UCMP Online Database. Available online at: http://ucmpdb.berkeley.edu/loc.html. Accessed June 16, 2021.

U.S. Department of Agriculture (USDA). 2021. United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey. Available online at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed July 2021.

United States Geological Survey (USGS). 1999. Land Subsidence in the United States. Circular 1182.

4.8 GREENHOUSE GAS EMISSIONS

This section identifies and evaluates issues related to Greenhouse Gas Emissions in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County did not receive any scoping comments related to Greenhouse Gas Emissions.

4.8.1 Existing Conditions

The Greenhouse Effect

Certain gases in the Earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. A GHG is any gas in the atmosphere that absorbs infrared radiation. As solar radiation enters the earth's atmosphere, a portion of the radiation is absorbed by the earth's surface, and a portion is reflected back through the atmosphere into space. The absorbed radiation is eventually emitted from the earth into the atmosphere, not as solar radiation, but as infrared radiation. Most solar radiation passes through GHGs; infrared radiation is selectively absorbed or "trapped" by GHGs as heat and then reradiated back toward the earth's surface, warming the lower atmosphere and the earth's surface. This phenomenon, known as the "greenhouse effect," is beneficial for maintaining a habitable climate on the earth. As the atmospheric concentrations of GHGs rise, however, the average temperature of the lower atmosphere gradually increases, thereby increasing the potential for indirect effects such as a decrease in precipitation as snow, a rise in sea level, and changes to plant and animal species and habitat.

Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one year to several thousand years). GHGs persist in the atmosphere long enough to be dispersed globally. Although the exact lifetime of any particular GHG molecule depends on multiple variables and cannot be pinpointed, scientific evidence reveals that more carbon dioxide (CO_2) is emitted into the atmosphere then is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO_2 emissions, approximately 54 percent is sequestered through ocean uptake, uptake by northern hemisphere forest regrowth, and other terrestrial sinks within a year, whereas the remaining 46 percent of human-caused CO_2 emissions remains stored in the atmosphere. The quantity of GHGs that it takes to ultimately result in climate change is not known precisely, although scientific evidence strongly indicates no single project would be expected to contribute measurably to a noticeable incremental change in the global average temperature.

Greenhouse Gases and Global Warming Potential

GHGs are emitted by natural processes and human activities. Natural GHG sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Human activities known to emit GHGs include industrial manufacturing, utilities, transportation, residential, and agricultural activities. The GHGs that enter the atmosphere because of human activities are CO_2, methane (CH_4), nitrous oxide (N_2O), fluorinated carbons (hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF_6]).

CO_2 is an odorless, colorless gas with both natural and anthropogenic sources. Examples of natural sources are respiration of bacteria, plants, and animals, evaporation from oceans, and decomposition of organic matter. Human activities that emit CO_2 include burning coal, oil, natural gas, and wood.

CH_4 is a flammable gas that is the main component of natural gas. When burned in the presence of oxygen, CO_2 and water are released. There are no direct health effects from exposure to CH_4. Sources of CH_4 include decay or organic material, natural gas fields, cattle, and landfills.

N_2O is a colorless gas that can cause euphoria, dizziness, and slight hallucinations when exposed to higher concentrations. Sources include agricultural sources (e.g., microbial processes in soil and water, fertilizer) and industrial processes (e.g., fossil fuel-fired power plants, vehicle emissions, nylon production).

Fluorinated Gases are synthetic and emitted from a variety of industrial processes.

> **HFCs** are man-made chemicals used as a substitute for CFCs (chlorofluorocarbons) for automobile air conditioners and refrigerants.
>
> **PFCs** are very stable and do not break down through the chemical processes in the lower atmosphere and have long lifetimes (between 10,000 and 50,000 years). The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.
>
> **SF_6** is an inorganic, colorless, odorless, nontoxic, nonflammable gas used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.

Global Warming Potential

The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of one kilogram of a trace substance relative to that of one kilogram of a reference gas. The reference gas used is CO_2. Therefore, GWP-weighted emissions are measured in metric tons (MT) of CO_2 equivalent ($CO2_e$). It was assumed that the GWP for CH_4 is 25 (which means that emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), the GWP for N_2O is 298, and the GWP for SF_6 is 22,800 based on the Intergovernmental Panel on Climate Change Fourth Assessment Report (IPCC 2007). These GWPs have been adopted by the EPA into 40 CFR 98 *Mandatory Greenhouse Gas Reporting*.

4.8.2 Regulatory Setting

Federal

The U.S. Supreme Court ruled on April 2, 2007, that CO_2 is an air pollutant as defined under the Clean Air Act (CAA), and that the EPA has the authority to regulate emissions of GHGs. Responding to the mounting issue of climate change, the EPA has taken actions to regulate, monitor, and potentially reduce GHG emissions.

Mandatory Greenhouse Gas Reporting Rule

On September 22, 2009, the EPA issued a final rule for mandatory reporting of GHGs from large GHG emissions sources in the United States. In general, this national reporting requirement will provide the EPA with accurate and timely GHG emissions data from facilities that emit 25,000 MT or more of CO_2 per year. This publicly available data allows the reporters to track their own emissions, compare them to similar facilities, and help identify cost effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial GHGs along with vehicle and engine manufacturers report at the corporate level. An estimated 85 percent of the total United States GHG emissions, from approximately 10,000 facilities, are covered by this final rule.

Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act

On December 7, 2009, the EPA adopted its Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the CAA (Endangerment Finding). The Endangerment Finding is based on Section 202(a) of the CAA, which states that the Administrator (of EPA) should regulate and develop standards for "emission[s] of air pollution from any class of classes of new motor vehicles or new motor vehicle engines, which in [its] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." The rule addresses Section 202(a) in two distinct findings. The first addresses whether the concentrations of the six key GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the health and welfare of current and future generations. The second addresses whether the combined emissions of GHGs from new motor vehicles and motor vehicle engines contribute to atmospheric concentrations of GHGs and therefore the threat of climate change.

The Administrator found that atmospheric concentrations of GHGs endanger the public health and welfare within the meaning of Section 202(a) of the CAA. The evidence supporting this finding consists of human activity resulting in "high atmospheric levels" of GHG emissions, which are most likely responsible for increases in average temperatures and other climatic changes. Furthermore, the observed and projected results of climate change (e.g., higher likelihood of heat waves, wildfires, droughts, sea level rise, and higher intensity storms) are a threat to the public health and welfare. Therefore, GHGs were found to endanger the public health and welfare of current and future generations.

The Administrator also found that GHG emissions from new motor vehicles and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHGs fit within the CAA definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements but rather allow the EPA to define the GHG standards proposed earlier in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.

Various subsequent federal rulemakings limit GHG emissions from fossil fuel-fired power plants through EPA's major stationary source permitting program and through EPA's New Source Performance Standards. These rulemakings have been subject to court challenges and political manipulation, such that applicants for air permits are required to evaluate the current status of the regulatory requirements. These GHG rules do not apply to the activities associated with the Project.

State

While climate change has been a concern since at least 1988, the efforts devoted to GHG emissions reduction and climate change policy have increased dramatically in recent years. In 2002, California passed AB 1493, which requires California Air Resources Board to develop and implement regulations to reduce automobile and light truck GHG emissions beginning with the 2009 model year. In June 2005, Executive Order S-3-05 was signed to reduce California's GHG emissions to: (1) 2000 levels by 2010; (2) 1990 levels by the 2020; and (3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of AB 32, the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that California Air Resources Board create a plan (Scoping Plan), which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." SB 32 codifies the emissions reduction goal of 40 percent below 1990 levels by 2030.

In 2002, SB 1078 established Renewable Portfolio Standard (RPS), which required an annual increase in renewable generation by the utilities with a goal of 20 percent by 2010. SB X1-2 expanded the RPS by establishing a renewable energy target of 20 percent of the total electricity sold to retail customers in California per year by 2013, and 33 percent by 2020 and subsequent years. SB 350 further expanded the RPS by establishing a goal of 50 percent of the total electricity sold to retail customers in California per year by 2030.

SB 97 acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. CEQA requires that lead agencies consider the reasonably foreseeable adverse environmental effects of projects they are considering for approval. GHG emissions can affect the environment adversely because they contribute, cumulatively, to global climate change. Thus, GHG emissions require consideration in CEQA documents.

Local

Colusa County does not have any plans or regulations specific to GHGs. The Colusa County General Plan (Colusa County 2012) does encourage renewable energy development in their conservation element:

> ***Policy CON 2-2:*** Encourage the development of large-scale commercial energy projects that utilize renewable sources such as solar, wind, biomass, and agricultural byproducts.
>
> ***Policy CON 2-3:*** Allow commercial alternative energy facilities, including solar, wind and biomass in the Agriculture General, Agriculture Upland, Industrial, Forest, and Resource Conservation land use designations with a Conditional Use Permit.

4.8.3 Methodology

A GHG analysis is required to be included in CEQA documents for all non-exempt projects. Colusa County Air Pollution Control District and Butte County Air Quality Management District have not adopted GHG thresholds of significance. The Butte County Air Quality Management District CEQA guidance suggests compliance with Qualified Greenhouse Gas Reduction Strategy, Lead Agency's threshold, or consistency with goals of AB 32 for projects subject to CEQA.

For this Project, the major source of GHG is the combustion of fuel in construction equipment, in vehicles used to haul equipment and materials, and in vehicles used by workers commuting to and from the site.

There are three types of GHG from fuel combustion, including CO_2, CH_4 and N_2O. GHG emissions are presented as $CO2_e$, which is computed based on global warming equivalence. The CH_4 global warming equivalence is 25 times that of CO_2, and the N_2O global warming equivalence is 298 times that of CO_2. Mathematically, $CO2_e$ can be represented by the following equation:

$$CO2_e \text{ Emissions} = CO_2 \text{ Emissions} + 25 \times CH_4 \text{ Emissions} + 298 \times N_2O \text{ Emissions}$$

The California Emissions Estimator Model was used to estimate the GHG emissions during the construction phase of the proposed Project. Based on the construction schedule, and the types and quantities of construction equipment and haul trucks, the maximum $CO2_e$ emissions were estimated. For typical diesel-fueled combustion equipment used in construction activities, the emissions factors adjusted with global warming equivalence are the following:

1. CO_2 emission factors are 22.4 pounds of $CO2_e$ per gallon consumed;
2. CH_4 emission factors are 0.065 pounds of $CO2_e$ per gallon consumed; and
3. N_2O emission factors are 0.068 pounds of $CO2_e$ per gallon consumed.

Additionally, GHG emissions are associated with fugitive emissions of SF_6 from gas-insulated switchgear equipment, such as the high voltage circuit breakers at the on-site substation. The SF_6 global warming equivalence is 22,800 times that of CO_2. The project will have no more than two high-voltage circuit breakers, each with up to 160 pounds of SF_6 for a total of up to 320 pounds, and a maximum leak rate of 0.5 percent per year. $CO2_e$ resulting from SF_6 gas leakage can be represented by the following equation:

$$CO2_e \text{ Emissions} = SF_6 \text{ gas contained in equipment (lbs)} \times 0.5 \text{ percent leak rate} \times 0.0004536 \text{ MT/lb} \times 22{,}800$$

4.8.4 Thresholds of Significance

A project would have a significant impact to GHG emissions if it would:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

4.8.5 Impacts Analysis

IMPACT 4.8-1: *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?* **(Less Than Significant Impact)**

Construction Emissions

Construction of the Project would increase GHG generation, which can contribute to global climate change. The Project will also decrease GHG emissions by providing renewable power.

This analysis is provided in response to recent heightened interest in the subject of global climate change and, specifically, in the California legislature's passage and the Governor's signing of AB 32, which is intended to control and reduce the emission of global warming gases in California; and SB 97, which directs the Office of Planning and Research and the California Resources Agency to develop CEQA Guidelines on how local agencies should analyze and, if necessary, mitigate for GHG emissions.

Construction emissions would be associated with vehicle engine exhaust from construction equipment and vehicles, equipment and material deliveries, and construction worker commuting trips. Construction-related GHG emissions are considered temporary and short term. Annual Construction Emissions are provided in Table 4.8-1.

Table 4.8-1. Estimated Annual Construction Greenhouse Gas Emissions

Construction Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2022	2,163.64	0.37	0.07	2,192.64
2023	3,386.44	0.55	0.09	3,428.03
Total Project Construction GHG Emissions	5,550.08	0.92	0.16	5,620.67

Operational Emissions

Operation of the Project would generate GHG emissions through motor vehicle trips to and from the Project site, energy use, special maintenance activities such as panel washing, waste and wastewater generation, potential use of the emergency generator, and potential leakage from gas-insulated circuit breakers. The California Emissions Estimator Model was used to calculate the annual GHG emissions based on the operational assumptions described previously. The estimated operational GHG emissions are shown in Table 4.8-2. GHG emissions from operational activities will be minimal and will not have significant impact on the environment.

Table 4.8-2. Estimated Annual Operational Greenhouse Gas Emissions

Annual Operation	CO_2	CH_4	N_2O	SF_6	$CO2_e$
	Metric Tons per Year				
Total Project Operational GHG Emissions	629.44	0.18	0.008	0.000726	653.0

IMPACT 4.8-2: *Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?* **(No Impact)**

The Project will support State legislation climate goals including emissions reductions required by AB 32 and SB 32 and will help the state reach renewable portfolio standards required by SB 1078, SB XI-2, and SB 350. While GHG would be generated from construction and occasional operation and maintenance activities, the Project would result in a net reduction in GHG from the production of solar energy that would potentially replace energy generated by fossil fuels. The Project would assist in the attainment of the state's goals by using a renewable source of energy that could displace electricity generated by fossil-fuel-fired power plants, and therefore would comply with

the goals and objectives of the state. The solar energy project will meet Colusa County's Policies CON 2-2 and 2-3.

4.8.6 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina Substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements would be made within the existing Cortina Substation footprint. These improvements would not generate GHG that would be significant to the environment. Nor would the improvements affect any plan, policy, or regulation regarding the reduction of GHG emissions. Therefore, the improvements would have no impact on GHG. Thus, no mitigation would be required.

4.8.7 Cumulative Impacts

GHG emissions are inherently cumulative that is significant and adverse. Accordingly, the significance of GHG emissions in this analysis is determined based on whether such emissions would have a cumulatively considerable impact on global climate change. Although the geographic scope of cumulative impacts related to GHG emissions is global, this analysis focuses on the Project's direct and/or indirect generation or offset of GHG emissions on the region and the state. The California Air Pollution Control Officers Association considers GHG impacts to be exclusively cumulative impacts, in that no single project could, by itself, result in a substantial change in climate (CAPCOA 2008). Therefore, the evaluation of cumulative GHG impacts presented above evaluated whether the Project would make a considerable contribution to cumulative climate change effects. The Project would result in a net reduction in GHG emissions over the duration of the use permit period and would not conflict with the state's GHG reduction goals. Therefore, the Project-specific incremental impact on GHG emissions would not be cumulatively considerable.

4.8.8 References

California Air Pollution Control Officers Association (CAPCOA). 2008. CEQA & Climate - Change Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, January 2008. Available: http:// www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf.

Colusa County. 2012. *General Plan.* July 2012 https://www.countyofcolusa.org/137/General-Plan.

Intergovernmental Panel on Climate Change (IPCC). 2007. IPCC Fourth Assessment Synthesis of Scientific-Technical Information Relevant to Interpreting Article 2 of the UN Framework Convention on Climate Change. https://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf.

4.9 HAZARDS AND HAZARDOUS MATERIALS

This section identifies and evaluates issues related to Hazards and Hazardous Materials in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received no scoping comments regarding Hazards and Hazardous Materials.

The County reviewed and considered the Phase I Environmental Site Assessment prepared for the Project by Tetra Tech (Appendix G).

4.9.1 Existing Conditions

A hazardous material is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (Health and Safety Code §25501(o)). The term “hazardous materials” refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it has one or more of the following characteristics:

- Toxicity (causes adverse human health effects);
- Ignitability (has the ability to burn);
- Corrosivity (causes severe burns or damage to materials); or
- Reactivity (causes explosions or generates toxic gases).

In some cases, past industrial or commercial activities on a site have resulted in spills or leaks of hazardous materials or wastes to the subsurface, resulting in soil and/or groundwater contamination. Depending on the type and concentrations of contamination, potential exposure can threaten public health if released from the soil, groundwater, or into the air. The four primary exposure pathways through which an individual can be exposed to a hazardous material or waste are inhalation, ingestion, bodily contact, and injection. Exposure can result from an accidental release of hazardous materials during transport, storage, or handling. Disturbance of contaminated subsurface soil during construction can also cause exposure to workers, the public, or the environment through excavating, stockpiling, handling, or transport of such soils.

The Project site is located in a rural, agricultural area of Colusa County in the northwestern Sacramento Valley. Hazardous waste handlers and generators in Colusa County include industries, businesses, public and private institutions, and residences. Agricultural land use can also involve the storage and handling of hazardous materials and wastes (e.g., application of pesticides and the storage and use of fuels). Gasoline stations and other facilities that utilize or store fuels, solvents, chemicals, or other hazardous materials represent other potential sources of hazardous materials in rural areas. The presence of these potential sources of hazardous materials, if encountered, can cause exposures that may result in adverse environmental and health effects depending on the extent of exposure.

4.9.1.1 Soil and Groundwater Contamination

In California, regulatory databases listing hazardous materials sites provided by numerous federal, state, and local agencies are consolidated in the "Cortese List" pursuant to Government Code Section 65962.5, effective in 1992. However, subsequent changes in web-based information availability since that time have made a consolidation of this list no longer necessary and the databases are maintained on an individual basis by the following responsible agencies:

- List of Hazardous Waste and Substances sites from Department of Toxic Substances Control (DTSC) EnviroStor database;
- List of Leaking Underground Storage Tank Sites by County and Fiscal Year from the State Water Resources Control Board (SWRCB) GeoTracker database;
- List of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit;
- List of "active" Cease and Desist Order and Cleanup and Abatement Order from the SWRCB; and
- List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, identified by DTSC and listed on their EnviroStor database.

The five databases cited above identify sites with suspected and confirmed releases of hazardous materials to the subsurface soil and/or groundwater. The SWRCB GeoTracker database includes leaking underground storage tanks (LUSTs), permitted underground storage tanks (USTs), Department of Defense sites, and Cleanup Program sites. The DTSC EnviroStor database includes federal and state response sites; voluntary, school, and military cleanups and corrective actions; and permitted sites. The reporting and statuses of these sites change as identification, monitoring, and clean-up of hazardous materials sites progress. Typically, a listed site is considered no longer to be of concern once it has been demonstrated that existing site uses combined with the levels of identified contamination present no significant risk to human health or the environment and the case is closed by the overseeing agency.

According to a review of the GeoTracker database, the Project site is not included as an active LUST site or a Cleanup Program site, nor are there any open cases within 1 mile of the Project site (SWRCB 2021). The nearest LUST or Cleanup Program site is located approximately 7 miles to the northeast of the Project, and it is an open, inactive Cleanup Program site associated with a private airplane hangar. The Project site is not expected to have been adversely affected by migration of hazardous materials through groundwater from this site.

4.9.1.2 Phase I Investigation

A Phase I Environmental Site Assessment was prepared for the Project site in February 2020 (Appendix G). The purpose of the investigation was to identify any known or suspected areas of hazardous materials or wastes that may be present beneath, on, or within proximity to the Project site. The Phase I Environmental Site Assessment did not find any evidence of any recognized environmental conditions (RECs), controlled recognized environmental conditions (CREC), or historical recognized environmental conditions (HREC) within the Project site. These terms are defined as follows:

- A REC is defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to release to the environment; 2) under conditions indicative of a release to the environment; or 3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not RECs.
- A CREC is defined as a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority and that subjects the property to activity and/or use limitations.
- A HREC is defined as a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed in a manner accepted by the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent), without subjecting the property to any activity and use limitations.

The Project site is comprised of three parcels and is surrounded by rural residential, agricultural fields, and undeveloped land. The Project site includes approximately 56 acres of land west of Spring Valley Road which is improved with six buildings and one large open-air garage as well as corral areas used for cattle. The six buildings include a warehouse, a maintenance shop, a small shed and three residential-like buildings. Though no construction or other Project-related activities would occur within this 56-acre area, it was included in the Phase I Environmental Site Assessment for completeness (Appendix G). No other buildings are listed or found on the Project site. Based on a review of historical documentation, the Project site appears as partially developed land as far back as 1937 with at least a couple of man-made structures located in a planted tree patch along the southern border and evidence of tilling and agriculture activities throughout the Project site. Documentation of surrounding areas show some land improvements of a road and some buildings to the north and east as far back as 1907. Land improvements to the Project site are minimal and consist mostly of dirt roads and cattle fencing.

4.9.1.3 Photovoltaic Solar Panels

The specific type of photovoltaic (PV) solar panels that would be installed on the Project site have yet to be determined; however, it is anticipated that the proposed PV solar panels would be made from a polycrystalline silicon or thin-film technology. Polycrystalline silicon PV panels may include cadmium telluride (CdTe) technology. Elemental cadmium (Cd), which forms CdTe when reacted with tellurium, is a lung carcinogen, and long-term exposure can cause detrimental effects on kidney and bone (Fthenakis 2003a). However, CdTe is in the environmentally stable form of a compound rather than the leachable form of a metal. Occupational Safety and Health Administration (OSHA) treats CdTe similarly to Cd and thus all facilities working with CdTe should use the same precautions that apply to Cd. Because such materials are in a solid and non-leachable state, broken polycrystalline silicon PV panels would not be a source of pollution to surface water, stormwater, or groundwater (Fthenakis 2003a).

The CdTe compound is encapsulated in the PV module with the PV module containing a very small amount of Cd. The amount of Cd within a CdTe module is proportional to the area of the module and thickness of the layers. Most CdTe layers are 1 to 3 microns thick which could contain anywhere from 3 to 9 g/m^2 of Cd. For comparison a 1-kW CdTe PV system contains as little cadmium as seven C-sized nickel cadmium batteries. In addition, as technology advances it is anticipated layer thickness would decrease therefore decreasing the amount of Cd in the modules (Fthenakis 2003a).

It has been demonstrated that standard operation of CdTe PV systems do not result in cadmium emissions to air, water, or soil (Fthenakis 2003b). During the PV module manufacturing process, CdTe is bound under high temperature to a sheet of glass by vapor transport deposition, coated with an industrial laminate material, insulated with solar edge tape, and covered with a second sheet of glass. The module design results in the encapsulation of the semiconductor material between two sheets of glass thereby preventing the exposure of CdTe to the environment (Fthenakis 2003a).

Several peer-reviewed studies have evaluated the environmental, health, and safety aspects of CdTe PV modules (Fthenakis et. al. 2003b). These studies have consistently concluded that during normal operations and foreseeable accident (e.g., fires, breakage), CdTe PV modules do not present an environmental risk. No emissions from CdTe PV would be released during fires because Cd would dissolve into the molten glass. Disposal risks of end-of-life CdTe PV modules are minimized because of the low solubility of CdTe and because the modules can be effectively recycled. CdTe PV modules have proven to pass the federal toxicity characteristic leaching procedure criteria for non-hazardous waste allowing the modules to be disposed of in landfills (Fthenakis 2003b).

Crystalline and amorphous silicon is a semiconductor used in solar cells to convert solar energy into electricity. Crystalline silicon PV panels may include small amounts of solid materials considered to be hazardous. Because such materials are in a solid and non-leachable state, broken crystalline silicon PV panels would not be a source of pollution to surface water, stormwater, or groundwater. Crystalline silicon panels removed from the Project site would be recycled or otherwise disposed of at an appropriate waste disposal facility. There are several possible disposal and recycling locations including Recycle PV and First Solar. Recycle PV of Grass Valley California opened a facility in 2018 for complete recycling of PV panels and internal materials in Arizona with plans to open several more facilities. First Solar has a state-of-the-art facility in Ohio for recycling all the components of solar arrays and claim they have a 90 percent recoverable rate of materials processed (First Solar 2021).

4.9.2 Regulatory Setting

4.9.2.1 Federal

This section describes the regulatory oversight of hazardous materials storage and handling, emergency response, site investigation and cleanup, and worker safety. In addition, regulations regarding fire hazards and local plans and policies are discussed.

4.9.2.1.1 Hazardous Materials Management

The primary federal agencies with responsibility for hazardous materials management include the U.S. Environmental Protection Agency (USEPA), OSHA, and the U.S. Department of Transportation (USDOT). State and local agencies often have either parallel or more stringent regulations than these federal agencies. In most cases, state law mirrors or overlaps federal law and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated.

4.9.2.1.1.1 Hazardous Materials Transportation

The USDOT regulates hazardous materials transportation on all interstate roads pursuant to its authority under the Hazardous Materials Transportation Uniform Safety Act (49 U.S.C. §5101 et

seq.). The purpose of the Act is to "protect against the risks to life, property, and the environment that are inherent in the transportation of hazardous material in intrastate, interstate, and foreign commerce" (49 U.S.C. §5101). Within California, the state agencies with primary responsibility for enforcing federal and state regulations and for responding to transportation emergencies are the California Highway Patrol and California Department of Transportation. Together, federal and state agencies determine driver-training requirements, load labeling procedures, and container specifications. Although special requirements apply to transporting hazardous materials, requirements for transporting hazardous waste are more stringent, and hazardous waste haulers must be licensed to transport hazardous waste on public roads.

4.9.2.1.1.2 Clean Air Act

Regulations under the Clean Air Act are designed to prevent accidental releases of hazardous materials. The regulations require facilities that store minimum quantities (called threshold quantities) or greater of listed regulated substances to develop a Risk Management Plan, including hazard assessments and response programs to prevent accidental releases of listed chemicals.

4.9.2.1.1.3 Comprehensive Environmental Response and Liability Act and Superfund Amendments and Reauthorization Act

The Superfund Amendments and Reauthorization Act (SARA) amends the Comprehensive Environmental Response and Liability Act (CERCLA) and governs hazardous substances. The applicable part of SARA for the Project is Title III, otherwise known as the Emergency Planning and Community Right-To-Know Act of 1986 (EPCRA). EPCRA establishes requirements for federal, state, and local governments, as well as Indian Tribes and industry members regarding emergency planning and reporting on hazardous and toxic chemicals. Key sections of the law include:

> ***§304:*** *Requires immediate notification to the local emergency planning committee (LEPC) and the state emergency response commission (SERC) when a hazardous material is released in excess of its reportable quantity (RQ). If a CERCLA-listed hazardous substance RQ is released, notification must also be given to the National Response Center in Washington, D.C. (RQs are listed in 40 CFR Part 302, Table 302.4). These notifications are in addition to notifications given to the local emergency response team or fire personnel.*
>
> ***§311:*** *Requires that either material safety data sheets (MSDSs) for all hazardous materials or a list of all hazardous materials be submitted to the SERC, LEPC, and local fire department.*

4.9.2.1.1.4 Toxic Substances Control Act, Resource Conservation and Recovery Act

The Federal Toxic Substances Control Act of 1976 and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the USEPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Amendments, which affirmed and extended the "cradle to grave" system of regulating hazardous wastes.

4.9.2.1.1.5 Occupational Safety

The federal OSHA is the agency responsible for assuring worker safety in the handling and use of chemicals in the workplace. The federal regulations pertaining to worker safety are contained in Title 29 of the Code of Federal Regulations, as authorized in the Occupational Safety and Health Act of 1970. They provide standards for safe workplaces and work practices, including standards relating to hazardous materials handling. At sites known or suspected to have soil or groundwater contamination, construction workers must receive training in hazardous materials operations and a site health and safety plan must be prepared. The health and safety plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at the contaminated site.

4.9.2.1.1.6 North American Electric Reliability Corporation Standards

The North American Electric Reliability Corporation Standards (NERC) is a nonprofit corporation comprising 10 regional reliability councils. The overarching goal of NERC is to ensure the reliability of the bulk power system in North America. To achieve its goal, the NERC develops and enforces reliability standards, monitors the bulk power systems, and educates, trains, and certifies industry personnel (NERC 2021). In order to improve the reliability of regional electric transmission systems and in response to the massive widespread power outage that occurred on the Eastern Seaboard, NERC developed a transmission vegetation management program that is applicable to all transmission lines operated at 200 kV and above to lower voltage lines designated by the Regional Reliability Organization as critical to the reliability of the electric system in the region.

The program, which became effective on April 7, 2006, establishes requirements of the formal transmission vegetation management program, which include identifying and documenting clearances between vegetation and any overhead, ungrounded supply conductors, while taking into consideration transmission line voltage, the effects of ambient temperature on conductor sag under maximum design loading, fire risk, line terrain and elevation, and the effects of wind velocities on conductor sway. The clearances identified must be no less than those set forth in the IEEE Standard 516-2003 (*Guide for Maintenance Methods on Energized Power Lines*) (IEEE 2003), which establishes minimum vegetation-to-conductor clearances in order to maintain electrical integrity of the electrical system.

4.9.2.2 State

In January 1996, the California Environmental Protection Agency (Cal EPA) adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program, Health & Safety Code §25404 et seq.) The program has six elements: hazardous waste generators and hazardous waste on-site treatment; underground storage tanks; aboveground storage tanks; hazardous materials release response plans and inventories; risk management and prevention programs; and Unified Fire Code hazardous materials management plans and inventories. The program is implemented at the local level. The Certified Unified Program Agency (CUPA) is the local agency that is responsible for the implementation of the Unified Program. In Colusa County, the Colusa County Environmental Health Division is the designated CUPA for all businesses (Colusa County 2021).

4.9.2.2.1 Hazardous Materials Management

The California Hazardous Materials Release Response Plans and Inventory Law (Business Plan Act, Health and Safety Code §25500 et seq.) requires any business that handles hazardous materials at or above specified thresholds to prepare a hazardous materials business plan (HMBP). The thresholds include any site that stores hazardous materials in the excess of 55 gallons (liquids), 500 pounds (solids), or 200 cubic feet for a compressed gas. The HMBP much include the following:

- Details, including floor plans, of the facility and business conducted at the site.
- An inventory of hazardous materials that are handled or stored on-site.
- An emergency response plan.
- A safety and emergency response training program for new employees with annual refresher courses.

The primary purpose of HMBP requirement is to provide basic information needed by first responders to prevent or mitigate damage to the public health and safety and to the environment from a release or threatened release of a hazardous material (Cal OES 2017). HMBP requirement could apply, for example, to the handling of mineral oil, which is a highly refined hydrocarbon-based oil used as an insulation medium and coolant in transformers and other electrical equipment.

4.9.2.2.1.1 Hazardous Waste Handling

The DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. Laws and regulations require hazardous materials users to store these materials appropriately and to train employees to manage them safely.

Individual states may implement their own hazardous waste programs in lieu of RCRA, as long as the state program is at least as stringent as federal RCRA requirements. In California, the DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; prescribe management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills. These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. The California Hazardous Waste Control Law is codified at Health and Safety Code §25100 et seq.

4.9.2.2.1.2 Occupational Safety

The California Department of Industrial Relations Division of Occupational Safety and Health (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in Title 29 of the Code of Federal Regulations.

Cal/OSHA regulations concerning the use of hazardous materials in the workplace require employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances, and communicating hazard information relating to hazardous substances and their handling. The hazard communication program also requires that safety data sheets (SDSs) be available to employees, and that employee information and training programs be documented. These regulations also require preparation of emergency action plans (escape and evacuation procedures, rescue and medical duties, alarm systems, and training in emergency evacuation).

4.9.2.2.1.3 Other State Regulations

The California Code of Regulations (CCR) contains additional requirements that would apply to the Project, including:

1. 8 CCR §2700 et seq., High Voltage Electrical Safety Orders, which establish essential requirements and minimum standards for installation, operation, and maintenance of electrical equipment to provide practical safety and freedom from danger.
2. 14 CCR §§1250-1258, Fire Prevention Standards for Electric Utilities, which provide specific exemptions from electric pole and tower firebreak and electric conductor clearance standards, and specifies when and where standards apply. It establishes minimum clearance requirements for flammable vegetation and materials surrounding structures.
3. 22 CCR §66273 Standards for Universal Waste Management, which regulate the management of universal wastes. These wastes are not fully regulated as hazardous waste in order to encourage their recycling. Batteries, electronic devices, mercury-containing equipment, lamps, cathode ray tubes and tube glass, and aerosol cans are considered universal wastes in California. A person or business who generates universal waste is required to follow the Management Requirements for Universal Waste Handlers (22 CCR §§66273.30-66273.39), which include storage, spill protection, and disposal rules designed to minimize risk of harm to public health and the environment.

4.9.2.2.2 National Pollutant Discharge Elimination System Construction General Permit

The Regional Water Quality Control Board administers the stormwater permitting program in the Central Valley Region pursuant to authority delegated under the federal Clean Water Act's National Pollutant Discharge Elimination System (NPDES) program. Construction activities disturbing 1 acre or more of land are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (Construction General Permit) and must apply for Construction General Permit coverage. Additional details of the Construction General Permit are provided in Section 4.10, *Hydrology and Water Quality*.

4.9.2.2.3 California Fire Code

The California Fire Code is contained within Title 24, Chapter 9 of the CCR. Based on the International Fire Code, the California Fire Code is created by the California Buildings Standards Commission and regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. Similar to the International Fire Code, the California Fire Code and the California Building Code use a hazards classification system to determine the appropriate measures to

incorporate to protect life and property. Section 608 of the International Fire Code (IFC) has been adopted by the state of California to minimize risk of fire from stationary battery storage systems and to contain fire in the event of such an incident. Compliance with Article 480 of the Electrical Code, which identifies insulation and venting requirements for stationary storage batteries, further reduces potential fire risk.

4.9.2.2.4 California Public Resources Code

The Public Resources Code includes fire safety regulations that apply to State Responsibility Areas (SRAs) during the time of year designated as having hazardous fire conditions, i.e., "fire season." In CAL FIRE's Tehama-Glenn unit, which includes the Project site, fire season has been identified as beginning on May 25 (CAL FIRE 2021). During the fire hazard season, these regulations restrict the use of spark arrestors on equipment that has an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire-suppression equipment that must be provided on-site for various types of work in fire-prone areas.

Public Resources Code Section 4291 provides that a person who owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining brush- or grass-covered lands or land that is covered with flammable material shall at all times maintain defensible space of 100 feet from each side and from the front and rear of the structure, but not beyond the property line.

Public Resources Code Sections 4292 and 4293 require that any person who owns, controls, operates, or maintains any electrical transmission or distribution line shall maintain a firebreak clearing around and adjacent to any pole, tower, and conductor that carries electric current as specified in the section.

4.9.2.2.4.1 California Strategic Fire Plan

The 2019 Strategic Fire Plan for California (Fire Plan) is the most recent statewide plan for the adaptive management of wildfire (CAL FIRE 2019). The central goals that are critical to reducing and preventing the impacts of fire revolve around both suppression efforts, natural resource management, and fire prevention efforts. The key goals of the Fire Plan include the following:

1. Improve our core capabilities.
2. Enhance internal operations.
3. Ensure health and safety.
4. Build an engaged, motivated, innovative workforce.

The Fire Plan does not contain any specific requirements or regulations. Rather, the plan details the goals and objectives, sets the course for the Department, and will guide Budget Change Proposals (BCPs) and management direction (CAL FIRE 2019).

4.9.2.2.4.2 Health and Safety Code §41700

This statute states, "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

4.9.2.2.4.3 Emergency Response

The California Governor's Office of Emergency Services (Cal OES) developed the State of California Emergency Plan (Cal OES 2017) to coordinate federal, state, local, and private agency emergency service providers' response to natural or human-caused emergencies. Responding to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services, which coordinates the responses of other agencies.

4.9.2.2.4.4 State Responsibility Area

In designated State Responsibility Areas, the State is financially responsible for the suppression and prevention of wildfires (Public Resources Code §4102). Its designated State Responsibility Areas consist of more than 31 million acres. The Colusa County Local Hazard Mitigation Plan (LHMP) Fire Responsibility Area Map identifies the Project site and the surrounding area as a State Responsibility Area (Colusa County 2018).

4.9.2.3 Local

The Safety Element of the Colusa County General Plan outlines Colusa County's planning strategies regarding emergency management and response, fire hazards, flood hazards, seismic and geological hazards, airport hazards, hazardous materials, and noise. The following list consists of the policies of the Health and Safety Element relevant to Hazards and Hazardous Materials:

> ***Policy SA 1-9:*** Except as otherwise by Federal or State law, require new buildings intended for human use to be designed in compliance with latest edition of the California Building Standards Code, California Fire Code, and other adopted standards based on potential risks.
>
> ***Policy SA 1-14:*** Require new land development proposals to avoid unreasonable exposure to geologic hazards, including earthquake damage, subsidence, liquefaction and expansive soils.
>
> ***Policy SA 1-15:*** All development and construction proposals shall be reviewed by the County to ensure conformance with applicable building standards.
>
> ***Policy SA 1-21:*** All projects subject to CEQA review shall address seismic safety issues and provide adequate mitigation for existing and potential hazards identified.
>
> ***Policy SA 1-45:*** Require identification of an adequate water sources and supply system, including fire flows, prior to development in very high, high, or moderate Fire Hazard Severity Zones. Major industrial and other large-scale developments may be required to provide and maintain water storage facilities to ensure adequate water supply.
>
> ***Policy SA 1-48:*** Required businesses and agricultural operations to comply with all applicable local, state and federal regulations regarding the use, transport, storage and disposal of hazardous waste and hazardous materials.
>
> ***Policy SA 1-50:*** Require proponents of projects that would involve the use, storage, transport or disposal of hazardous materials or hazardous waste to demonstrate full compliance with all applicable local, state and federal regulations related to hazardous materials and waste. Any significant adverse environmental impacts associated with exposure to hazardous materials should be mitigated to a less than significant impact prior to approval of the project.

4.9.2.3.1 Colusa County Office of Emergency Services Local Hazard Mitigation Plan

In 2018, Colusa County and four participating jurisdictions (cities of Colusa and Williams, United States Bureau of Reclamation District 108, and the Sacramento River West Side Levee District) updated the 2004 Federal Emergency Management Agency (FEMA) approved Colusa County LHMP. The LHMP includes a risk assessment that identifies and profiles hazards that pose a risk to the County and participating jurisdictions, assesses the vulnerability of the Planning Area to these hazards, and examines the existing capabilities to mitigate them (Colusa County 2018). Based on the results of the risk assessment, the participating jurisdictions developed a mitigation strategy for reducing the County's and all participating jurisdictions' risk and vulnerability to hazards. The resulting Mitigation Strategy for the Colusa County Planning Area is comprised of LHMP goals and objectives and a mitigation action plan which includes a series of mitigation action projects and implementation measures (Colusa County 2018).

4.9.3 Thresholds of Significance

A project would result in significant impacts to hazards and hazardous materials if it would:

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 the reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment;

c) Emit hazardous emissions or handle hazardous materials or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;

d) Be located on a site which is included on a list of hazardous materials site complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;

e) Result in a safety hazard or excessive noise for people residing or working in the project area, 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;

f) Impair implementation of or physically interfere with an adopted emergency plan; or

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

4.9.4 Impacts Analysis

IMPACT 4.9-1: *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?* **(Less than Significant Impact)**

Construction

Project construction would last approximately 11 months, with activities including grading, site preparation, installation of panels and other solar facility equipment and infrastructure, and construction of the gen-tie line that would be needed to connect the project to the grid. The Project would not involve the routine transport, use, or disposal of hazardous materials, as defined by the Hazardous Materials Transport Uniform Safety Act. The majority of the waste generated during construction would be non-hazardous, and consist primarily of cardboard, wood pallets, wire,

scrap metal, common trash, and wood wire spools. Most construction waste would be disposed of at a non-hazardous landfill or at a recycling facility whenever feasible. Construction would generate an average of approximately 20 cubic yards of non-hazardous solid waste per week over the period of construction. Sanitary waste would be managed using portable toilets and hauled for off-site disposal.

During construction of the Project, diesel and gasoline fuels and other hazardous materials such as oils, solvents, hydraulic fluids, and paints commonly associated with construction equipment may be stored on-site. These materials would be stored and handled in a manner to prevent accidental release, i.e., consistent with the hazardous materials handling Best Management Practices (BMP) and other measures contained within the required Stormwater Pollutions Prevention Plan (SWPPP), which would require them to be stored within locked aboveground containers with secondary containment. Further discussion of BMP requirements is provided in Section 4.10 *Hydrology and Water Quality*, of this EIR. Safety data sheets for all applicable materials present at the site would be made readily available to on-site personnel.

With these protections in place, Project construction would result in a less than significant impact relating to the creation of a potential significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Operation

Project operation and maintenance (O&M) activities may involve the transportation, use, or temporary storage of a variety of hazardous materials, such as batteries, hydraulic fluid, diesel fuel, insulation oil for the transformers, grease, lubricants, paints, solvents, and adhesives. The Project substation would include transformers, breakers, switches, meters, and related equipment.

O&M activities associated with a PV solar facility is relatively limited when compared to other industrial land uses. Any hazardous materials that would be stored on-site would be contained in designated areas in accordance with a HMBP. Adherence to the HMBP as required by the California Hazardous Materials Release Response Plans and Inventory law (Health and Safety Code §25500 et seq.) would ensure that all handling, storage, and disposal of hazardous materials would be conducted in accordance with proven practices to minimize exposure to workers or the public. PV panel cleaning would be infrequent and use of demineralized water or a dry-cleaning method would be used to remove dust. The site would be fenced to prevent public access to hazardous materials.

O&M activities otherwise generally would be limited to performing visual inspections, monitoring plant performance, executing minor repairs, and responding to plant adjustment. On intermittent occasions, repairs or replacement of equipment, and other specialized maintenance may occur. Repair and maintenance activities may involve the transportation, use, or temporary storage of a variety of hazardous materials such as batteries, hydraulic fluid, diesel fuel, insulation oil for the transformers, grease, lubricants, paints, solvents, and adhesives. However, due to the largely self-operating nature of the facility, such actions would likely occur infrequently.

O&M vehicles would include light duty trucks (e.g., pickup, flatbed) and other light equipment for maintenance and module washing. Heavy equipment is not expected to be utilized during normal

operation. Large or heavy equipment may be brought to the facility infrequently for equipment repair or replacement or vegetation control. Long-term maintenance and equipment replacement would be scheduled in accordance with manufacturer recommendations to ensure equipment integrity is maintained. The solar modules would consist of durably constructed units designed to withstand exposure to the elements for a period of 35 years or more. An estimated 49 kW (or less) sized emergency generator would be located at the substation for use in the event that the regional transmission system fails. The generator would be powered by either propane or diesel and an approximately 220-gallon aboveground storage fuel tank would be located immediately adjacent to the generator that would include secondary containment safety measures in accordance with regulatory requirements. Moving parts, such as motors and tracking module drive equipment, motorized circuit breakers and disconnects, and inverter equipment would be serviced on a regular basis, and unscheduled maintenance would be conducted as necessary.

During O&M activities, the Project would generate a small amount of waste, such as broken or rusted metal, defective or malfunctioning equipment, electrical materials, empty containers, other miscellaneous solid waste, and typical refuse from the O&M staff. Approximately one cubic yard of waste per week would be accumulated in an on-site, covered dumpster that would be collected weekly by a commercial waste management service.

The PV modules that would be installed on the Project site could include CdTe thin film technology. CdTe is generally bound to a glass sheet by a vapor transport deposition during the manufacturing process, followed by sealing the CdTe layer with a laminate material and then encapsulating it in a second glass sheet. The modules meet rigorous performance testing standards demonstrating durability in a variety of environmental conditions. The PV modules conform to the International Electrotechnical Commission (IEC) test standards IEC 61646 and IEC 61730 PV as tested by a third-party testing laboratory certified by the IEC (Solar ABCs 2020). In addition, the PV modules also conform to Underwriters Laboratory (UL) 1703, a standard established by the independent product safety certification organization. In accordance with UL 1703, the PV modules undergo rigorous accelerated life testing under a variety of conditions to demonstrate safe construction and to monitor their performance (Solar ABCs 2020). Studies indicate that standard operation of CdTe PV systems does not result in cadmium emissions to air, water, or soil (Fthenakis 2003b). These studies have consistently concluded that during accidents such as fires, no emissions from CdTe PV modules would be released because cadmium would dissolve into molten glass. The Project includes operational and maintenance protocols that would be used to identify and remove damaged or defective PV modules during annual inspections. CdTe PV modules have proven to pass the federal TCLP leaching criteria for non-hazardous waste allowing the modules to be disposed of in landfills or recycled as practical in compliance with applicable laws and regulations (Fthenakis 2003b).

Lithium batteries would be used at the site and would either be contained within steel enclosures within the energy storage facility or distributed throughout the solar facility within metal housing units. Transformers would contain dielectric insulating fluid in the form of vegetable or mineral oil and would be not routinely be handled by O&M staff. Dust palliatives and herbicides may be transported to the Project site if they are used during operations to control vegetation. These materials would be stored in appropriate containers to prevent accidental release. Equipment containing hazardous materials would be equipped with spill containment areas and battery storage would be in accordance with OSHA requirements such as inclusion of heating, ventilation,

air conditioning, fire protection systems, and spill response supplies. All components would have a comprehensive Spill Prevention, Control, and Countermeasure (SPCC) plan, in accordance with all applicable federal, state, and local regulations. Therefore, the preparation and implementation of a SPCC plan that would describe proper handling, storage, transport, and disposal techniques and methods to be used to avoid spills and minimize impacts in the event of a spill, would further reduce impacts related to hazards to a less-than-significant level.

Closure, Decommissioning, and Site Restoration

During the Project decommissioning and site restoration process, it is anticipated that Project structures would be removed to a depth of up to 3 feet below ground surface. Aboveground equipment that would be removed would include steel poles and foundations, electrical wiring, equipment on the inverter pads, transformer pads, fuel tank, emergency generator, telecommunications equipment, and other associated equipment. Equipment would be de-energized prior to removal, salvaged (where possible), placed in appropriate shipping containers, and secured in a truck transport trailer for shipment off-site. Removal of the solar modules would include removal of the racks on which the solar panels are attached, and their placement in secure transport crates and a trailer for storage, for ultimate transportation to another facility. All remaining oil and lubricants removed from equipment and any remaining fuel in the emergency generator fuel tank would be transferred to an appropriate container and disposed of in accordance with the manufacturers' specifications and consistent with applicable regulatory requirements.

Once the solar modules have been removed, the racks would be disassembled, and the structures supporting the racks would be removed. All other associated site infrastructure would be removed, including fences, concrete pads that may support the inverters, transformers and related equipment, and underground conduit/electrical wiring. All materials would be recycled to the extent feasible. The area would be thoroughly cleaned, and all debris removed. As discussed above, the PV module manufacturer would likely provide CdTe module collection and recycling services. In any case, current CdTe PV modules pass federal leaching criteria for non-hazardous waste, due in part to the low solubility of CdTe, which means they would not pose a significant risk for cadmium leaching if they reached a landfill. Therefore, decommissioning and disposal of Project components, including the solar panels, would have a less than significant impact related to the routine transport, storage, and disposal of hazardous materials.

Mitigation: None required.

IMPACT 4.9-2: *Would the project create a significant hazard to the public or the environment through the reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?* **(Less than Significant Impact)**

Construction

Potential impacts that may result from upset or accidents during construction of the Project include the accidental release of materials, such as hydraulic fluid, fuel, insulation oil, grease, lubricants, paints, solvents, and adhesives. Generally, the quantities of these hazardous materials would be relatively limited and handled in accordance with manufacturer's guidelines. In addition, implementation of the BMPs required by the NPDES Construction General Permit, would include

containment and spill response measures which would reduce the potential impact from upset and accident conditions to a less-than-significant level.

The Phase I Environmental Site Assessment did not identify any RECs on-site (Appendix G), and there are no LUSTS or Cleanup Program sites documented within 7 miles of the Project (SWRCB 2021), such that encountering aboveground and/or sub-surface contamination is not anticipated during construction. Therefore, risk of upset and accident conditions would be unlikely, and the impacts would be less than significant.

Operation and Maintenance

O&M of the solar facility would generate little hazardous waste. Electrical equipment used by the Project, such as inverters and each enclosed transformer at the substation would include an insulating fluid such as vegetable or mineral oil, but upsets or accidents would be controlled via the secondary containment provided in accordance with applicable federal, state, and local laws and regulations. The insulating oil contained in each transformer does not normally require replacement, minimizing the potential for upsets or accidents involving its use. Further, Health and Safety Code Section 25500 et seq. requires the preparation of hazardous materials release response plans such as a HMBP under specified circumstances.

Hazardous materials are unlikely to be released during any accidental breakage of the PV panels because they have been found to be sufficiently encapsulated within sheets of glass (Fthenakis 2003a). Similarly, fire damage would not result in the release of hazardous materials because at typical flame temperatures, the CdTe compounds were not found to vaporize but instead Cd would dissolve into the molten glass (Fthenakis 2003a). CdTe is a highly stable semiconductor compound due to strong chemical bonding that translates to extremely low solubility in water, low vapor pressure, and a melting point greater than 1,800°F. Potential impacts to soil, air, and groundwater quality from broken CdTe PV modules are highly unlikely to pose a potential health risk as they are below human health screening levels (Sinha et al. 2012).

Hazardous materials that would be present in the energy storage facility, such as the battery storage system, would be contained within specifications that follow applicable federal state and local requirements including the inclusion of appropriate ventilation, acid resistant materials, and presence of spill protection supplies.

Combustible vegetation or agricultural products on and around the Project boundary would not be routinely handled by O&M staff but managed by the Project owner or its affiliates during operation. Removal and/or maintenance of vegetation may require herbicide and if not handled properly, use of these products could create a hazard to the public (construction workers, maintenance employees, and nearby residences). However, application would be limited, application would be in accordance with federal, state, and County regulations, and any herbicides would be applied by a state-licensed pesticide applicator. This applicant-proposed activity and adherence to regulatory requirements would reduce impacts related to use of herbicides to a less than significant level.

The Project would not involve the routine transport, use, or disposal of hazardous materials, as defined by the Hazardous Materials Transportation Uniform Safety Act. The closest designated route for the transport of hazardous materials is State Route 20 to the north of the Project site

and Interstate 5 to the east of the Project site. Adherence to regulations and applicant-proposed protocols during the storage, transportation, and usage of any hazardous materials would minimize and avoid the potential for significant upset and accident condition impacts.

Closure, Decommissioning, and Site Restoration

The closure, decommissioning, and site restoration process is summarized under Impact 4.9-1, above. Many components of the solar facility and energy storage system are recyclable. Most panel materials would be recycled to the extent feasible, with minimal disposal to occur in landfills in compliance with all applicable laws. See Section 4.18, *Utilities and Service Systems*, for information about landfill capacity. The disposal of batteries may be considered hazardous waste and will be disposed of in accordance with the applicable hazardous waste requirements. Solar PV module manufacturers generally provide CdTe module collection and recycling services. Nonetheless, current CdTe PV modules pass federal leaching criteria for non-hazardous waste, due in part to the low solubility of CdTe, presenting a low risk for cadmium leaching if they reached a landfill.

Mitigation: None required.

IMPACT 4.9-3: *Would the project emit hazardous emissions or handle hazardous materials or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?* **(No Impact)**

The nearest school, Williams Elementary School, is located approximately 6 miles to the northeast of the proposed Project site. The Project is not located within 0.25-mile of an existing or proposed school, as such there would be no impact.

Mitigation: None required.

IMPACT 4.9-4: *Would the project be located on a site which is included on a list of hazardous materials site complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?* **(No Impact)**

The Project is not located on a site included on a list of hazardous materials sites pursuant to Government Code Section 65962.5. According to the Phase I Environmental Site Assessment prepared for the Project site (Appendix G) and a recent review of publicly available environmental databases, the Project site is not listed as a hazardous materials site (SWRCB 2021). As a result, there would be no impact.

Mitigation: None required.

IMPACT 4.9-5: *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?* **(No Impact)**

The Project would not be located within an airport land use plan and is located approximately 8 miles from the nearest private airport (the Williams Soaring Center). Therefore, the Project is not part of any airport land use plan and would not interfere with airport operations or result in a safety hazard for people residing or working in the area.

Mitigation: None required.

IMPACT 4.9-6: *Would the project impair implementation of or physically interfere with an adopted emergency plan?* **(No Impact)**

The Project would not impair implementation of or physically interfere with the Colusa County LHMP coordinated by the Colusa County Office of Emergency Services. The Project site is located in a sparsely populated rural area. The Project would not alter or impair any of the existing road networks and would require relatively low staffing or operation and maintenance activities. As a result, the Project would not impair implementation of or physically interfere with any adopted emergency response plan or emergency evacuation plan.

IMPACT 4.9-7: *Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?* **(Less than Significant Impact)**

The Project is located in a Moderately Hazardous State Responsibility Area (SRA) and is approximately 2.2 miles from the nearest Very High SRA. The primary fire protection services in the vicinity of the Project site are provided by the Williams Fire Protection Authority (WFPA).

The Project would be designed in compliance with federal, State, and local worker safety and protection codes and regulations which would minimize the potential for the occurrence of fire. Project maintenance and operation may introduce potential ignition sources such as transformers, electric transmission line (including gen-tie inline), substations, maintenance vehicles, and gas/electric-powered machinery. The proposed inverters and PV arrays may also be identified as a potential ignition source. However, the potential fire risk is low for these Project components. All battery components for the BESS would be installed on concrete pads and contained within an enclosure to minimize the potential for sparks or ignition. All such enclosures would be equipped with a fire suppression system. Therefore, the proposed Project is not expected to expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

4.9.5 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's property at the Cortina Substation to the available PG&E Cortina substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements would be made within the existing Cortina Substation footprint. As a result of these improvements, it is anticipated that there would be minimal impacts to hazardous materials. The improvements are not likely to emit any hazardous emissions that could impact any existing or proposed schools and there are no schools within a 0.25-mile radius of the Project site or the Cortina Substation. Nor would these improvements interfere with any airports, as there are no airports within a 2-mile radius of the Project site or the Cortina Substation. The improvements would not use any hazardous materials or generate hazardous waste beyond what was described in the impact of the analysis of the Project. Therefore, there would be no significant impacts and no mitigation is required.

4.9.6 Cumulative Impacts

Construction, operation, maintenance, and decommissioning of the Project, in combination with the incremental impacts of other projects would not cause or contribute to any significant cumulative impacts relating to Hazards and Hazardous Materials. As discussed above, the Project would result in less than significant impacts related to the potential to encounter hazardous materials, accident or upset conditions during the routine use of hazardous materials or release hazardous materials into the environment that could cause harmful exposures.

Releases of hazardous materials or wastes are site specific, and PV solar projects generally do not cumulatively contribute with the impacts of other projects because of the relatively low quantities used and stored at PV solar projects and the nature and characteristics of the emissions. An accident involving a hazardous material release during project construction or operation are location specific and limited in geographic scope. Therefore, the Project would not cause or contribute to any significant cumulative impacts from accidental releases or discovery of hazardous materials and/or wastes.

Hazardous materials to be used during decommissioning and removal activities are of low toxicity and would consist of fuels, oils, and lubricants. Because these materials are required for operation of construction vehicles and equipment, BMPs would be implemented to reduce the potential for or exposure to accidental spills or fires involving the use of hazardous materials similar to what would be required of other cumulative projects. Impacts from minor spills or drips would be avoided by thoroughly cleaning up minor spills as soon as they occur in accordance with construction requirements that all cumulative projects adhere to. While foreseeable projects have the potential to cause similar impacts, these projects would comply with applicable regulatory requirements and it is assumed these projects would also implement similar BMPs.

In addition, conformance with existing state and County regulations and implementation of appropriate safety measures during construction of the Project, as well as other cumulative projects, would further reduce the impact to a level that would not cause or contribute to any significant cumulative effects.

4.9.7 References

California Department of Fire and Forestry Resources (CAL FIRE). 2021. https://www.fire.ca.gov/stats-events. Accessed February 9, 2021.

CAL FIRE. 2019. 2019 Strategic Fire Plan for California. Available at https://www.fire.ca.gov/media/5504/strategicplan2019-final.pdf. Accessed July 2021.

California State Water Resources Control Board (SWRCB). 2021. https://geotracker.waterboards.ca.gov. Accessed February 10, 2021.

California Governor's Office of Emergency Services (Cal OES). 2017. State of California Emergency Plan. Available at https://www.caloes.ca.gov/PlanningPreparednessSite/Documents/California_State_Emergency_Plan_2017.pdf. Accessed May 2021.

Colusa County. 2018. *Local Hazard Mitigation Plan*. December 2018.

Colusa County. 2021. *Hazardous Materials & Waste (CUPA)*. Available at: https://www.countyofcolusa.org/426/Hazardous-Materials-Waste-CUPA. Accessed July 2021.

First Solar. 2021. First Solar website accessed at: http://www.firstsolar.com/Modules/Recycling. Accessed February 10, 2021.

IEEE Standards Association (IEEE). 2003. IEEE 516-2003 - *IEEE Guide for Maintenance Methods on Energized Power Lines*. Available at https://standards.ieee.org/standard/516-2003.html. Accessed May 2021.

Fthenakis. 2003a. CdTe PV: Real and Perceived EHS Risks. May 2003 production, accepted December 1, 2003.

Fthenakis. 2003b. Life Cycle impact analysis of cadmium in CdTe PV production, accepted December 1, 2003.

North American Electric Reliability Corporation (NERC). 2021. https://www.nerc.com/pa/Stand/Pages/default.aspx. Accessed July 2021.

Sinha, P., R. Balas, L. Krueger, and A. Wade. 2012. Fate and transport evaluation of potential leaching risks from cadmium telluride photovoltaics. Environmental Toxicology and Chemistry, 31(7), 1670-1675.

Solar ABCs. 2020. Solar America Board for Codes and Standards. http://www.solarabcs.org/codes-standards/IEC/index.html. Accessed December 27, 2020.

State Water Resources Control Board (SWRCB), 2021. Geotracker Database search, https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=West+California+Avenue+and+State+Route+33%2C+Fresno+County+CA. Accessed May 2021.

4.10 HYDROLOGY/WATER QUALITY

This section identifies and evaluates issues related to Hydrology and Water Quality Resources in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received no scoping comments regarding Hydrology and Water Quality Resources.

4.10.1 Existing Conditions

4.10.1.1 Regional Setting and Climate

The Project lies within the northwestern Sacramento Valley, the northern part of the greater Central Valley (Beck and Haase 1974). The Central Valley watershed includes the Sacramento Valley in the north, the San Joaquin Valley in the south, and the Tulare Basin at the far south. The Sacramento Valley drains into the Sacramento River as does the San Joaquin Valley. Together the drainage systems meet to form the Sacramento-San Joaquin River Delta.

The Sacramento Valley is underlain by the Sacramento Valley Groundwater Basin, which is comprised of 18 subbasins, including the Colusa Subbasin and the Butte Subbasin. The Colusa Subbasin spans portions of Colusa and Glenn Counties; and the Butte Subbasin, spans portions of Butte, Colusa, and Glenn Counties (Colusa 2021). The Project site is located in the western portion of the Colusa Subbasin.

The Colusa Subbasin is located in an area of the Sacramento Valley that is bounded to the east by the Sacramento River, to the west by the Coast Range and foothills, to the south by Cache Creek, and to the north by Stony Creek (DWR 2006). The average annual precipitation of the subbasin ranges from 17 to 27 inches, higher precipitation may occur in the western portion of the subbasin (DWR 2006).

4.10.1.2 Surface Water Hydrology

Most of the streams that make up the tributaries to the Sacramento River and are included within the Colusa Subbasin drain from the Sierra Nevada in the east and the Coast Ranges from the west. Five smaller watersheds make up the tributaries that drain into the Colusa Subbasin, which include the Big Chino Creek watershed, Upper Stony Creek watershed, Butte Creek watershed, Honcut Headwater-Lower Feather River watershed, and the Sacramento Stone Corral watershed (CGA 2021). All of these feed into the Sacramento River.

Spring Creek is adjacent to the Project site to the south and Salt Creek occurs approximately 1 mile north of the Project site. Both creeks converge and drain into the Colusa Basin Drain, 10 miles northeast of the Project site.

4.10.1.3 Groundwater

The Project site is within the Colusa Subbasin in the Sacramento Valley. The Subbasin spans both Colusa and Glenn Counties. The Project site overlays the southwestern area of the Subbasin. The Colusa Subbasin is bounded by Stony Creek to the north, the Coast Ranges to the west, the Sacramento River to the east, and the Yolo Subbasin to the south. The Colusa Subbasin covers approximately 1,131 square miles and contains 73 public supply wells, 3,500

domestic wells, and 2,600 agriculture wells. The current groundwater storage in the Colusa Subbasin is estimated to be 26-million-acre feet (AF) (CGA 2021).

The climate in Colusa County can be described as cool, wet winters and hot, dry summers. There is a wide variation in annual precipitation, as there are periodic multiple-year dry periods. Climate data from the Colusa County weather station is representative of the regional climate. Between 2010 and 2020, the average maximum temperature was 75.7 degrees Fahrenheit, average minimum temperature was 47.4 degrees Fahrenheit, and the average temperature was 61.1 degrees Fahrenheit. The average annual rainfall in the same period was approximately 14.1 inches, with the highest rainfall of 21.45 inches in 2010 and the lowest rainfall of 6.73 inches in 2015. The annual rainfall fluctuated significantly because of the 2007 to 2015 dry period (NCEI 2021).

4.10.1.4 Flooding

The Federal Emergency Management Agency (FEMA) is responsible for mapping areas subject to flooding during a 100-year flood event (i.e., 1 percent chance of occurring in a given year). According to the FEMA Flood Insurance Rate Map, the Project site does not lie within a 100-year flood zone or any other special flood hazard zone and is in an area where flood risk is minimal (FEMA 2021).

4.10.1.5 Dam Inundation Zones

According to the Colusa County Local Hazard Mitigation Plan, the Project site is not located within a dam inundation zone (Colusa County 2018).

4.10.2 Regulatory Setting

Federal Clean Water Act

Basin Plan – Beneficial Use and Water Quality Objectives (Clean Water Act §303)

The Project site is located within the jurisdiction of the Central Valley Regional Water Quality Control Board (Region 5). Region 5 is tasked with implementing the adopted Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins through planning, permitting, and enforcement of established water quality objectives (see Table 4.10-1). In accordance with state policy for water quality control, Region 5 employs a range of beneficial use definitions for surface waters, groundwater basins, marshes, and mudflats that serve as the basis for establishing water quality objectives and discharge conditions and prohibitions. The Basin Plan has identified existing and potential beneficial uses supported by the key surface water drainages throughout its jurisdiction. According to the Basin Plan, the Project site is within the Sacramento River Basin, and the existing beneficial uses for surface and groundwater in the study area include: agricultural uses, municipal water supply, warm water habitat, recreation, and warm water fish, spawning, and wildlife habitat, as shown in Table 4.10-1.

Table 4.10-1. Beneficial Uses of Water Bodies Near the Project Site

Surface Water Body	Existing Beneficial Uses
Colusa Basin Drain	AGR, MIGR, REC1, SPWN, WARM, WILD
Clear Lake	AGR, MUN, REC1, REC2, WARM, SPWN, WILD
Clear Lake to Yolo Pass	AGR, IND, MUN, REC1, REC2, WARM, SPWN, WILD
Beneficial Uses Key: AGR (Agricultural Supply); COLD (Coldwater Habitat); IND (Industrial Service Supply); MIGR (Migration of Fish or Aquatic Organisms); MUN (Municipal and Domestic Supply); REC-1 (Body Contact Recreation); REC-2 (Non-contact Recreation); SPWN (Spawning, Reproduction and/or Early Development); WARM (Warm Freshwater Habitat); WILD (Wildlife Habitat). Source: RWQCB 2018	

National Pollutant Discharge Elimination System Program Clean Water Act §402

Under Clean Water Act Section 402, the NPDES stormwater permitting program controls water pollution by regulating point sources of pollution to waters of the United States. The Central Valley Regional Water Quality Control Board (RWQCB) administers the NPDES program in Colusa County, as discussed below.

Because the Project would result in the disturbance of 1.0 acre or more of soil with the potential to discharge to waters of the United States, it would be subject to the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ), commonly referred to as the Construction General Permit. The permit regulates stormwater discharges associated with construction or demolition activities, such as clearing and excavation; construction of buildings; and linear underground projects, including installation of water pipelines and other utility lines.

The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes specific Best Management Practices (BMPs) designed to prevent sediment and other pollutants from contacting stormwater and from moving off-site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management and good housekeeping, and are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area. Routine inspection of all BMPs is required under the provisions of the Construction General Permit. In addition, the SWPPP is required to contain a visual monitoring program and a chemical monitoring program for non-visible pollutants. Post-construction requirements necessitate that construction sites be restored to pre-project hydrological conditions to ensure that the physical and biological integrity of aquatic ecosystems are sustained in their existing condition.

In addition to stormwater discharges, the Construction General Permit also covers other non-stormwater discharges including irrigation of vegetative erosion control measures, water to control dust, uncontaminated groundwater from dewatering, and other discharges not subject to a separate general NPDES permit adopted by the RWQCB. The discharge of non-stormwater is authorized under the following conditions:

- The discharge does not cause or contribute to a violation of any water quality standard;
- The discharge does not violate any other provision of the General Permit;

- The discharge is not prohibited by the applicable Basin Plan;
- The discharger has included and implemented specific BMPs required by the General Permit to prevent or reduce the contact of the non-stormwater discharge with construction materials or equipment;
- The discharge does not contain toxic constituents in toxic amounts or (other) significant quantities of pollutants;
- The discharge is monitored and meets the applicable numeric action levels; and
- The discharger reports the sampling information in the SWPPP Annual Report.

Federal Emergency Management Agency

Federal Emergency Management Agency (FEMA) determines flood elevations and floodplain boundaries and distributes the flood insurance rate maps used in the National Flood Insurance Program. These maps identify the locations of special flood hazard areas, including 100-year floodplains (i.e., areas that would have a 1 percent annual chance of flooding).

Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations. Those regulations enable FEMA to require municipalities participating in the National Flood Insurance Program to adopt certain flood hazard reduction standards for construction and development in 100-year floodplains.

California Fish and Game Code Section 1602

Section 1602 of the Fish and Game Code protects the natural flow, bed, channel, and bank of any river, stream, or lake under the jurisdiction of the California Department of Fish and Wildlife (CDFW). CDFW jurisdiction over lakes and streams is to the top of bank, or edge of riparian vegetation as determined by edge of dripline, whichever is further (CDFW 1994). For projects affecting the bed, bank, or flow of water under CDFW jurisdiction, applicants must submit a notification of lake or streambed alteration to CDFW. CDFW may issue a Lake and Streambed Alteration Agreement if it determines that the activity may substantially adversely affect fish and wildlife resources.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, the State Water Resources Control Board has authority over waters of the State and water quality. The RWQCBs have local and regional authority. The Project is proposed in an area under the jurisdiction of the Central Valley RWQCB. The Central Valley RWQCB prepares and periodically updates the Basin Plan, described above. Pursuant to the Clean Water Act NPDES program, the Porter-Cologne Act also delegates the authority to the RWQCBs to issue NPDES permits. If a proposed project or portion of a proposed project does not require a federal permit but does involve dredge or fill activities that may result in a discharge to waters of the State, the RWQCB has the option to regulate the dredge and fill activity under its state authority in the form of Waste Discharge Requirements.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act of 2014 (Water Code §10723) provides a framework for sustainable management of groundwater resources. In groundwater basins

designated by the Department of Water Resources as medium and high priority, local public agencies and locally-controlled groundwater sustainability agencies are required to develop and implement groundwater sustainability plans (GSPs) or alternatives to GSPs. The Colusa Groundwater Authority and Glenn Groundwater Authority are working together to develop the GSP for the Colusa Subbasin. The development of the GSP began in September 2020 and a draft of the first four chapters of the GSP was distributed for public review in May 2021. The final draft with all eight chapters is expected to be completed by January 2022.

Local

The Colusa County General Plan (in accordance with Government Code Section 65300 et seq.) identifies the County's vision for the future and provides a framework to guide decisions on growth, development, and conservation of open space and resources (Colusa County 2012). The County's policies regarding hydrology and water quality resources are provided in the Safety and Conservation Elements listed below:

> **Policy SA 1-27:** Maintain adequate lands than can be used for groundwater recharge and stormwater management. These lands may include parcels designated as Agriculture General (AG), Designated Floodway (DF), and Resource Conservation (RC).
>
> **Policy SA 1-29:** Require new development projects to demonstrate how stormwater runoff will be detained or retained on-site and/or conveyed to the nearest drainage facility as part of the development review process. Project applicants shall demonstrate that project implementation would not result in increases in the peak flow runoff to adjacent lands or drainage facilities.
>
> **Policy SA 1-31:** Require project proponents to pay their fair share for construction of off-site drainage or flood control infrastructure improvements necessitated by their projects.
>
> **Policy SA 1-34:** Require new structures to be located outside of the 100-year floodplain to the greatest extent feasible. Exceptions may be made for agricultural structures that would not significantly impede flood waters or result in significant water quality impacts during a storm.
>
> **Policy CON 1-27:** Encourage agricultural landowners to improve on-site stormwater retention features and implement feasible Best Management Practices (BMPs) to reduce site runoff and provide for natural removal of water pollutants.
>
> **Policy CON 1-33:** Require new development and expansion of existing uses to incorporate best management practices for water use and include water conservation measures.
>
> **Policy CON 1-35:** Encourage the use of water conservation measures, including low flow plumbing; reclaimed wastewater for non-potable uses; dual plumbing that allows grey water from showers, sinks, and washers to be reused for landscape irrigation in new developments; and native and drought-tolerant landscaping.

4.10.3 Thresholds of Significance

A project would result in significant impacts to hydrology and water quality resources if it would:

a) *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?*

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

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

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

   ii) *Substantially increase the rate or amount of surface run off 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?*

   iv) *Impede or redirect flood flows?*

d) *Occur in a flood hazard, tsunami, or seiche zones, risk release of pollutants due to the project inundation?*

e) *Conflict with or obstruct implementation of water quality control plan or sustainable groundwater management plan?*

4.10.4 Impact Analysis

IMPACT 4.10-1: *Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?* **(Less than Significant)**

Construction

The portions of the Project site that would be disturbed for construction are relatively flat, with little potential for any concentrated runoff to occur. Construction would involve the use of bulldozers, graders, semi-trucks, and various other types of heavy equipment for vegetation removal, grubbing, grading, and installation of roads and other facilities. These construction activities would involve minor changes to on-site topography; however, these activities would potentially loosen existing surface soils and sediments, increasing the potential for erosion during storm events. Water used for dust suppression also has the potential to generate runoff that could transport sediments and dissolved solids. The use of construction equipment on-site may involve the accidental release of fuel, oils, brake dust, lubricants, antifreeze, and other potentially hazardous substances at the Project construction site. These water quality pollutants could be delivered to surface water bodies during storm events, and/or be infiltrated into groundwater and the underlying aquifer, resulting in the degradation of water quality.

The Project would be subject to compliance with the NPDES General Permit for Stormwater Discharge Associated with Construction and Land Disturbance Activities (Construction General Permit). The Construction General Permit would include development and implementation of a SWPPP. The objectives of a SWPPP are to identify pollutant sources that may be delivered off-site (in the form of runoff) and affect the quality of stormwater discharge; to implement site controls and practices to reduce stormwater pollution; and to protect water quality of receiving waters. The SWPPP would include site-specific BMPs to minimize erosion on-site and reduce or otherwise prevent conditions of erosion and stormwater runoff.

As described in Section 4.9, *Hazards and Hazardous Materials*, diesel and gasoline fuels and other hazardous materials such as oils, solvents, hydraulic fluids, and paints commonly associated with construction equipment would be stored and handled in a manner to prevent accidental release, i.e., consistent with the hazardous materials handling BMPs, Spill Prevention, Control, and Countermeasure Plan, and other measures contained within the required SWPPP.

With implementation of the General Construction Permit conditions, including the preparation and implementation of a SWPPP, Spill Prevention, Control, and Countermeasure Plan , and associated BMPs, the impact on water quality during construction would be temporary and less than significant.

Operation and Maintenance

The average non-potable water use during operation and maintenance would be for PV solar panel washing and general maintenance and is estimated to be approximately 1 AFY. The need for panel washing would be infrequent and determined based on operating considerations. Demineralized water would be sprayed on the PV panels to remove dust or a dry cleaning method may be used. The relatively low amount of water used during this phase would be insufficient to generate significant runoff.

As described in Section 4.9, *Hazards and Hazardous Materials*, The California Hazardous Materials Release Response Plans and Inventory Law requires any business that handles hazardous materials at or above specified thresholds to prepare a hazardous materials business plan. The thresholds include any site that stores hazardous materials in excess of 55 gallons (liquids), 500 pounds (solids), or 200 cubic feet for compressed gas. Any hazardous materials exceeding the established thresholds that would be stored on-site would be contained in designated areas in accordance with a Hazardous Materials Business Plan, which would ensure that all handling, storage, and disposal of hazardous materials would be conducted in accordance with proven practices to prevent accidental release.

For these reasons, the impacts on water quality during operation and maintenance would be temporary and less than significant.

Decommissioning

Decommissioning of the Project site would result in similar potential impacts as those described for construction, including the potential for erosion, sedimentation, and the release of water quality pollutants. Decommissioning activities would be required to comply with the same applicable federal, state, and local water quality regulations. Ground disturbing activities during decommissioning would require coverage under the Construction General Permit, including the

preparation and implementation of a SWPPP. Stormwater management measures would be required to be identified and implemented that would effectively control erosion and sedimentation and other construction related pollutants during decommissioning. Therefore, the potential impact of Project decommissioning activities on water quality would be temporary and less than significant.

Overall, the Project's impacts on water quality standards or waste discharge requirements would be temporary, and less than significant.

IMPACT 4.10-2: *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?* **(Less than Significant)**

The existing land use of the Project site is cattle grazing and the disturbed Project area is approximately 768 acres. There are no public water services within the Project boundaries, but the natural vegetation on-site consumes water through evapotranspiration. As described in the Water Supply Assessment prepared for the Project and included as Appendix H, the natural vegetation covers approximately 15 percent of the existing land surface, such that the annual, existing water demand is estimated to be 440 AF.

The PV solar facility requires a minimal amount of water for construction and operational use. Most of the water demand will occur during construction because very little water is required for annual operational uses. During construction, the water is used to keep the dust down and condition the soil for compaction. The soil must maintain adequate moisture levels to be properly compacted, as the soil will act as a subbase for concrete foundation. For the construction phase, it is estimated the Project will require 46 AF of potable water over a period of 11 months. Additionally, some of the natural vegetation will be cleared for the PV solar facility, which may result in a higher percent of return water for construction than the return of water from evapotranspiration.

To operate the PV solar facility, a small amount of water will be used for panel washing, as panel washing is not required regularly and will be conducted only as needed. Rainfall is anticipated to provide occasional cleaning and additional water is only required for cleaning when the performance of the solar panels degrades significantly between precipitation events. Any rainfall or additional water used to clean the panels is expected to return to the basin. The annual operational water demand is estimated to be approximately one AF.

As described in the Water Supply Assessment provided as Appendix H, the water required for construction is significantly lower than the estimated water currently required for the natural vegetation, which will result in a reduction of water consumption of approximately 394 AF during the construction period of 11 months. After construction, Project water consumption would be reduced even further, as the operational water use is dramatically lower than the construction water use. The operational use of the solar facility is estimated to reduce the typical water consumption by 439 AFY.

The overall reduction in water consumption at the Project site will provide a benefit to the Subbasin. The Colusa Subbasin will not be negatively impacted with the construction and operation of the PV solar facility.

IMPACT 4.10-3: *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:*

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

ii) Substantially increase the rate or amount of surface run off 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?

iv) Impede or redirect flood flows?

(Less than Significant)

The Project is not within a flood zone and would include minimal new impervious surfaces. Solar panel posts, fences, gen-tie poles, the BESS, the O&M building, and the substation would not prevent stormwater flow, and the Project's design would follow the natural drainage of the site.

The portions of the Project site that would be disturbed for construction are relatively flat, with little potential for any concentrated runoff to occur. Construction would involve the use of bulldozers, graders, semi-trucks, and various other types of heavy equipment for vegetation removal, grubbing, grading, and installation of roads and other facilities. These construction activities would involve minor changes to on-site topography and would potentially loosen existing surface soils and sediments, increasing the potential for erosion during storm events. Water used for dust suppression also has the potential to generate runoff that could transport sediments and dissolved solids.

The Project would be subject to compliance with the NPDES Construction General Permit. The Construction General Permit would include development and implementation of a SWPPP. The objectives of a SWPPP are to identify pollutant sources that may be delivered off-site (in the form of runoff) and affect the quality of stormwater discharge; to implement site controls and practices to reduce stormwater pollution; and to protect water quality of receiving waters. The SWPPP would include site-specific BMPs to minimize erosion on-site and reduce or otherwise prevent conditions of erosion and stormwater runoff.

Because the Project would introduce minimal new impervious surfaces and would be designed to follow natural drainage on-site, Project construction would not substantially alter the existing drainage patterns of the Project site. Construction of the Project could increase the potential for erosion or siltation and runoff at the Project site, which could introduce contaminants and other pollution into surrounding waterways. Compliance with the NPDES Construction General Permit, and associated SWPPP and BMPs, would reduce the potential for these impacts to occur.

The Project site is not in a mapped flood zone, which would further reduce the potential impacts of flooding, or impeding or redirecting flood flows, at the Project site. Adherence to the discussed federal and state laws would ensure the impacts are temporary and less than significant.

Operation and maintenance of the Project would not include activities that would alter the existing drainage patterns at the Project site. Decommissioning would include ground disturbing activities similar to those performed during construction, which may alter the drainage patterns at the Project site. The same requirements of the Construction General Permit and other applicable construction mitigation measures would apply to activities during decommissioning, and adherence to those requirements would reduce any potential impacts. Impacts during operations and maintenance and decommissioning would be temporary and less than significant.

IMPACT 4.10-4: *Is the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to the project inundation?* **(No Impact)**

The Project site is not within a 100-year flood zone or dam inundation zone, according to the FEMA Flood Insurance Rate Map and the Colusa County Local Hazard Mitigation Plan. Additionally, the Project site is approximately 77 miles east of the Pacific Ocean and the closest large body of water nearby (Clear Lake) is approximately 21 miles west of the Project site. Based on these conditions, the Project site is not at risk of being inundated by a tsunami or seiche. There would be no impact regarding the release of pollutants due to Project inundation.

IMPACT 4.10-5: *Would the project conflict with or obstruct implementation of water quality control plan or sustainable groundwater management plan?* **(Less than Significant)**

As discussed above, the Project would be regulated under the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin. With adherence to the conditions stipulated by the SWPPP and the NPDES permits for the Project, water quality impacts would not result in violations or conflict with the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin. There would be no impact related to conflict with, or obstructing, a water quality control plan.

The Colusa Groundwater Authority and Glenn Groundwater Authority began development of the GSP for the Colusa Subbasin in September 2020. The GSP has not been adopted; however, because the water required for construction, decommissioning and operations is significantly lower than the estimated water currently required for the natural vegetation, it is not anticipated to conflict or obstruct with implementation of the GSP that is ultimately adopted. The Project would not substantially increase impervious surface area; thus, groundwater recharge would be maintained with the Project.

4.10.5 Pacific Gas and Electric Cortina Substation

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements made would be within the existing Cortina Substation footprint. These improvements would not affect any water quality standards or interfere with groundwater recharge. Nor would the improvements increase the risk of pollutant discharge as a result of project inundation. Additionally, the PG&E improvements would not obstruct the implementation

of water quality control or sustainable groundwater management plan. Thus, the improvement would have no impact and no mitigation would be required.

4.10.6 Cumulative Impacts

The geographic scope of analysis of cumulative effects includes the Project site, affected waterways, and surrounding watersheds and aquifers potentially impacted by site clearing, construction, operation and maintenance, and decommissioning of the Project. The cumulative development for water quality includes all development within the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin; the cumulative context for groundwater is the Colusa Subbasin. This analysis considers the incremental effects of the Project to determine whether, when added to the effects of other projects in the cumulative scenario, they would cause or contribute to significant cumulative effects.

There would be no impact with respect to being located in a flood hazard, tsunami, or seiche zone, such that the Project would not cause or contribute to any potential significant cumulative impact regarding these resource areas.

The Project has the potential to contribute runoff and discharges that, in combination with other past, present, and future development in the Basin Plan watersheds, would potentially impact water quality. Likewise, these development activities would have the potential to infiltrate and affect groundwater quality in the Basin, such that the Project would contribute to a potentially significant cumulative impact. However, the Project would be required to comply with the current and future Basin Plan, applicable NPDES Permit requirements and ordinances, and other water quality regulations. These regulatory requirements and the design of the Project would reduce the Project's incremental contribution to the cumulative impact to a less-than-cumulatively considerable level.

The Project, in combination with other past, present, and future development in the Basin Plan area would require the use of groundwater for construction, operation, and decommissioning activities. Construction of the Project would be temporary and short term; operation and maintenance activities would span the life of the Project, and decommissioning activities would occur after the Project's life expectancy (i.e., 35 years) and also would be temporary and short-term. Groundwater pumping would be regulated by the Basin Plan and the future GSP which is currently being drafted. The GSP has not been adopted; however, because the water required for construction, decommissioning and operations of the Project is significantly lower than the estimated water currently required for the natural vegetation and because runoff will be controlled such that it will be available for local recharge, it is not anticipated to conflict with or obstruct implementation of the GSP that is ultimately adopted. The Project would not substantially increase impervious surface area; thus, groundwater recharge would be maintained with the Project and it would not contribute to cumulatively considerable impacts to groundwater.

4.10.7 References

Beck, W.A. and Y.D. Haase. 1974. Historical Atlas of California. Oklahoma City, University of Oklahoma Press.

California Department of Fish and Wildlife (CDFW). 1994. *A Field Guide to Lake and Streambed Alteration Agreements*. Sections 1600-1616, California Fish and Game Code. Environmental Services Division.

Colusa County. 2012. Colusa County General Plan. Adopted July 31, 2012.

Colusa County. 2018. Local Hazard Mitigation Plan Update. December.

Colusa County. 2021. https://www.countyofcolusa.org/677/Sustainable-Groundwater-Management-Act. Accessed July 2021.

Colusa Groundwater Agency (CGA). 2021. Groundwater Sustainability Plan. https://colusagroundwater.org/projects/groundwater-sustainability-plan/. Accessed July 2021.

Department of Water Resources (DWR). 2006. Sacramento Valley Groundwater Basin, Colusa Subbasin. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/5_021_52_ColusaSubbasin.pdf. Accessed July 2021.

Federal Emergency Management Agency (FEMA). 2021. Flood Insurance Rate Maps. https://msc.fema.gov/portal/. Accessed July 2021.

National Centers for Environmental Information (NCEI). 2021. Colusa County Precipitation Data; [online]; https://www.ncdc.noaa.gov/cdo-web/results; Accessed July 2021.

Regional Water Quality Control Board (RWQCB). 2018. Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin, Fifth Edition. Revised May 2018.

4.11 LAND USE/PLANNING

This section identifies and evaluates issues related to Land Use and Planning in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received no scoping comments regarding Land Use and Planning.

4.11.1 Existing Conditions

The Project site is on three parcels of private land that total approximately 1,024 acres and is currently operated as a cattle ranch. To avoid environmental constraints, approximately 768 acres of the 1,024-acre site would be used for the Project. The Project site is surrounded by rural residential, agricultural fields, and undeveloped land. Spring Valley Road runs through the Project site from north to south. The gen-tie line follows Spring Valley Road north to Walnut Drive at which point it follows Walnut Drive to PG&E's Cortina substation. The nearest community to the Project site is the city of Williams, which is located approximately 6.5 miles northeast. The Project site lies within Colusa County's jurisdiction and land uses on the Project site are governed by the Colusa County General Plan and Zoning Ordinance.

4.11.2 Regulatory Setting

4.11.2.1 Federal

4.11.2.1.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA), implemented by Title 40 of the Code of Federal Regulations Parts 1500-1508, requires the evaluation of relevant environmental effects of a federal action. A federal action includes the use of federal lands, use of federal monies, or the issuance of federal permits and/or approvals for a proposed action. NEPA requires preparation of an Environmental Impact Statement for "major federal actions significantly affecting the quality of the human environment." Actions involving lesser levels of environmental impact are categorically excluded from comprehensive review or are addressed through an Environmental Assessment.

Portions of the Project's gen-tie line at the Tehama-Colusa Canal are on land administered by the United States Bureau of Reclamation (USBR). The Project would require USBR's granting of right-of-way at the locations where the gen-tie line intersects federal lands, and this granting of right-of-way would be a federal action subject to NEPA. USBR is currently conducting the NEPA review of the federal action, and it is anticipated that it will be determined to be Categorically Excluded from NEPA.

4.11.2.2 State

4.11.2.2.1 California Land Conservation Act of 1965

The California Land Conservation Act of 1965 (Williamson Act, Government Code §51200 et seq.) prevents farmland from conversion to other uses by offering owners of agricultural land a property tax incentive to maintain their land in agricultural use. The Williamson Act is a state program implemented at the county level that allows agricultural landowners to voluntarily and contractually

agree to retain land included in an agricultural preserve[1] in agricultural or open space uses for a period of at least 10 years and, in return, to pay reduced property taxes. The term of the contract automatically renews each year, such that unless it is specifically nonrenewed or cancelled, the contract always has a 10-year period horizon.

The most common method for withdrawing from a Williamson Act Contract is filing a notice of nonrenewal, which can be initiated by either the land use agency or the landowner. Under this process, the contract is ended after a 9-year nonrenewal period, during which taxes gradually increase every year. A Williamson Act Contract cancellation is an option under limited circumstances and conditions set forth in Government Code §51280 et seq. In such cases, landowners may petition the board or council of their county or city for cancellation of the Williamson Act Contract. The board or council may grant tentative cancellation only if it makes required statutory findings (Government Code §51282(a)). The board or council must consider comments from the director of the California Department of Conservation (DOC) before acting on a proposed cancellation if comments are provided. A cancellation becomes final, and a Certificate of Cancellation is issued by the board or council upon the completion of all Conditions of Approval. The entirety of the Project site is included in three separate agricultural preserves. A Williamson Act Cancellation Petition is being filed for approval by the Colusa County Board of Supervisors and demonstrating consistency with Government Code §51280 et seq.

4.11.2.3 Local

4.11.2.3.1 Colusa County General Plan

The Colusa County General Plan consists of 12 elements: Agriculture; Circulation; Housing; Community Character; Conservation; Economic Development; Land Use; Noise; Open Space and Recreation; Public Services and Facilities; Safety; and Housing. The Agriculture, Community Character, and Land Use Elements include goals, policies, and actions for use of lands in the County (Colusa County 2012).

The Project site is designated in the Colusa County General Plan as “General Agriculture” and “Upland Agriculture,” in which cultivated agriculture, industrial and commercial agriculture, agricultural tourism, timber, mining, energy production (including solar), single family housing, and farmworker housing are allowed and appropriate uses (see Colusa County General Plan Land Use Element Table LU-1). No overlay designations, regional plans, community plans, or specific plans described in the Colusa County General Plan apply to the Project site, and the entirety of the Project site is included in three agricultural preserves under Williamson Act Contracts. The Applicant has prepared and submitted a Williamson Act Contract Cancellation Petition for consideration by the Board of Supervisors. Section 4.1, *Agriculture and Forestry Resources*, contains specific information pertaining to agricultural resources within and near the Project site.

The Project site is not located within the jurisdiction of a community plan, specific plan, or regional plan as identified by the Colusa County General Plan. Colusa County General Plan policies that are relevant to the Project include:

[1] An agricultural preserve defines the boundary of an area within which a city or county would be willing to enter into Williamson Act contracts with landowners: The boundary is designated by resolution of the city council or board of supervisors with jurisdiction over the property. Agricultural preserves generally must be at least 100 acres in size.

Policy AG 1-2: Lands designated for agricultural use shall remain designated for agriculture and not be rezoned or redesignated to an urban use unless all of the following criteria are met:

a. The lot(s) for which conversions is requested is adjacent to agriculture or agricultural support uses (e.g., receiving plants, hulling plants, warehousing, trucking, distribution, and other related activities).

b. Conversion will not be detrimental to existing agricultural operations.

c. The conversion land is within 500 feet of existing urban infrastructure (e.g., water supply lines and sewer lines) and conversion will constitute a logical contiguous extension of designated urban area.

d. The lot(s) proposed for conversion include a buffer at the agricultural/urban transition zone to protect future users of conservation lands from nuisances associated with typical agricultural practices.

e. No feasible alternative location (e.g., non-agricultural lands or less productive agricultural lands) exists.

f. The use would not have a significant adverse effect on existing or potential agricultural activities on surrounding.

Policy AG 2-5: Encourage and support the development of new agricultural related industries featuring alternative energy, utilization of agricultural waste, biofuels, and solar or wind farms.

Policy LU 2-11: Develop accommodations for the development of large-scale commercial energy production, such as solar, on agricultural parcels. Such parcels shall require the following:

- A use permit.
- An energy production overlay zone.
- Detailed and rigorous site planning and development.

Such projects shall only be located on agricultural parcels with marginal or poor farmland. Prime farmlands are not appropriate for this type of development.

4.11.2.4 Zoning Ordinance

The Project site is located in Colusa County's Foothill Agriculture (F-A) and Exclusive Agriculture (E-A) zones (Colusa County 2014). The Colusa County Zoning Code addresses allowable uses in E-A and F-A zoning districts, which allow energy generation for off-site use with a Use Permit or a Minor Use Permit with an Energy Production (EP) Overlay Zone. Based on consultation with the County, the Applicant is pursuing a Use Permit for the Project.

4.11.3 Thresholds of Significance

A project would result in significant impacts to land use and planning if it would:

a) Physically divide an established community; or

b) Cause 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.

4.11.4 Impact Analysis

IMPACT 4.11-1: *Would the project physically divide an established community?* **(No Impact)**

The division of an established community could result from the construction of a physical barrier to neighborhood access or the removal of a means of access. The Project site is located in a rural area in an unincorporated area of Colusa County, approximately 6.5 miles from the city of Williams. There are no other established communities in the general area. Residences in this area are few and far between. The Project would not physically divide an established community as the construction, operation, and decommissioning phases of the Project do not propose any features that would create a physical barrier that would hinder existing community access. Additionally, the Project would not involve the removal of any existing publicly used means of access. Therefore, the Project would not physically divide an established community.

Mitigation: None required.

IMPACT 4.11-2: *Would the project cause 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?* **(No Impact)**

Colusa County is processing the Use Permit application for the Project in accordance with the Use Permit described in §44-1.080.030 of the Zoning Ordinance. The Applicant has filed a Use Permit application to construct, operate, maintain, and decommission the PV electricity generating facility (including ancillary facilities) within the Project boundary. Compliance with conditions of approval for the Use Permit would ensure that the Project would not conflict with applicable Colusa County General Plan, Zoning, or other County land use plans, policies, or regulations that have been adopted for the purpose of avoiding or mitigating environmental effects.

For example, the Project would be consistent with **Policy AG 1-2** because the Project site would remain designated for agriculture and not be rezoned or redesignated to an urban use. The Project would be consistent with **Policy AG 2-5** because it would feature alternative energy, utilization of agricultural waste, biofuels, and solar or wind farms while maintaining livestock grazing on adjacent portions of the assessor's parcels outside of the Project site and under the same landowner. The Project would be consistent with **Policy LU 2-11** because it would allow for development of large-scale commercial solar energy production with a Use Permit on non-prime agricultural land.

The Project site is zoned F-A and E-A. Colusa County allows commercial scale solar facility projects through the Use Permit process, as described in Zoning Code §44-2.20.30. Compliance with conditions of approval for the Use Permit would ensure the Project would not conflict with the underlying F-A and E-A zones.

Mitigation: None required.

4.11.5 PG&E Cortina Substation Improvement

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's property at the Cortina Substation to the available PG&E

Cortina substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements made would be within the existing Cortina Substation footprint. These improvements would not divide an established community, nor would they interfere with any land use plan, policy, or regulation. Therefore, the PG&E Cortina substation improvements would have no impact per significance criteria described for Impacts 4.11-1 or 4.11-2. No mitigation would be required.

4.11.6 Cumulative Impacts

Because the Project would not have any impact on land use and planning, it would not cause or contribute to any cumulative impact.

4.11.7 References

Colusa County. 2012. Colusa County General Plan. Adopted July 31, 2012.

Colusa County. 2014. Zoning Ordinance. Adopted August 26, 2014.

4.12 MINERAL RESOURCES

This section identifies and evaluates issues related to Mineral Resources in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County did not receive scoping comments related to Mineral Resources.

4.12.1 Existing Conditions

The existing conditions for the Project site are described below.

4.12.1.1 Geologic Environment

As described more fully in Section 4.7*, Geology, Soils, and Paleontological Resources*, the Project site is located in an area of alluvial rocks. East of the Project site on the floor of the Sacramento Valley the underlying materials are primarily the youngest alluvial sediments, Quaternary age, unconsolidated to semi-consolidated, and mostly non-marine (Q). The Project site sits on older materials (QPc), Pliocene to Pleistocene in age, slightly more consolidated than the younger materials, and deposited into both non-marine and marine environments.

4.12.1.2 Mineral Resources Potential

The Mineral Resources Data System, administered by the U.S. Geological Survey, provides data to describe metallic and nonmetallic mineral resources, including deposit name, location, commodity, deposit description, production status and references. To confirm the presence/absence of existing surface mines, closed mines, occurrences/prospects, and unknown/undefined mineral resources within the study area, the Mineral Resources Data System online database was reviewed (USGS 2021). No mineral resources or operations are located within the Project site boundary.

Based on the geologic setting, the only mineral resources with the potential to occur near the Project site are aggregate resources. Alluvial geologic units in the region are potential sources of sand and gravel that could have value as a mineral resource commodity. Because sand and gravel are low-value, high-volume resources, the economic value and feasibility of developing them is predicated on the existence of high local demand from the construction industry. The closest gravel mine is Lovelady Ranch, which has been closed for a number of years, approximately 20 miles northwest of the Project site.

There are no active mining claims within the Project site, nor is there any locatable mineral activity within the Project site boundary (USGS 2021). Based on the geological environment and historical trends, the potential for occurrence of locatable minerals is low within the surrounding area. However, none of these resources occurs within 30 miles of the Project site and they are unlikely to be found within the geologic units that underlie the site or surrounding area.

Sand and gravel deposits are ubiquitous throughout the Quaternary geologic deposits near the Project site and throughout the region (USGS 2021; DOC 2000). None of the past or current locations of sand and gravel production intersects the Project site.

4.12.1.3 Mineral Land Classification under the Surface Mining and Reclamation Act

The state Surface Mining and Reclamation Act of 1975 (SMARA), as amended, mandated the development of mineral land classifications to help identify and protect mineral resources in areas within the state that are subject to urban expansion or other irreversible land uses that would preclude mineral extraction. After classification of mineral resource areas, SMARA provided for the designation of lands containing mineral deposits of regional or statewide significance. In addition, SMARA was designed to provide guidelines for the proper reclamation of mineral lands. In compliance with SMARA, the State Mining and Geology Board established Mineral Resource Zones to classify lands that contain mineral deposits. According to California Geological Survey maps, the Project site is not located within a Mineral Resource Zone (CGS 2021).

4.12.2 Regulatory Setting

4.12.2.1 Federal

No federal statutes, regulations, plans, or policies govern mineral resources on or near the Project site.

4.12.2.2 State

4.12.2.2.1 State Surface Mining and Reclamation Act of 1975

The SMARA (Pub. Res. Code §2710 et seq.) mandated the initiation by the State Geologist of mineral land classification in order to help identify and protect mineral resources in areas within the state subject to urban expansion or other irreversible land uses which would preclude mineral extraction. SMARA also allowed the State Mining and Geology Board to designate lands containing mineral deposits of regional or statewide significance. Mineral lands are mapped according to jurisdictional boundaries (i.e., counties), mapping all mineral commodities at one time in the area, using the California Mineral Land Classification System (DOC 2000). The objective of classification and designation processes is to ensure, through appropriate lead agency policies and procedures, that mineral deposits of statewide or regional significance are available when needed. The Project site is not classified by the State Mining and Geology Board as being located within a known mineral resource area (DOC 2000).

4.12.2.3 Local

The Colusa County General Plan Conservation Element includes goals and policies intended to preserve the future availability of mineral resources in the County and to promote the orderly extraction of mineral resources in the County while minimizing the impact of these activities on surrounding land uses and the natural environment. Relevant policies from this planning document include:

> ***Policy CON 2-24:*** Conserve mineral resources identified by the state to be of regional or statewide significance for mineral resource extraction.

4.12.3 Thresholds of Significance

A project would result in significant impacts to mineral resources if it would:

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; or*

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.

4.12.4 Impact Analysis

IMPACT 4.12-1: *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? (***No impact)**

Most mining activities occur in the northwestern area of Colusa County. The Project site is not located at or near the two mines; there are no active mining claims within the Project site, nor is there any locatable mineral activity within the Project site boundary; therefore, the Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

IMPACT 4.12-2: *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?* **(No impact)**

The Project site is not delineated as a locally important mineral resource (DOC 2000). The implementation of the Project would not result in a loss of locally important mineral resource.

4.12.5 PG&E Cortina Substation Improvement

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina Substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements made would be within the existing Cortina Substation footprint. These improvements would result in the availability of a known mineral resource, nor would they 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. Therefore, the PG&E Cortina Substation improvements would have no impact on significance criteria described for Impacts 4.12-1 or 4.12-2. No mitigation would be required.

4.12.6 Cumulative Impacts

As described above, the Project would result in no impact to mineral resources. Therefore, the Project would not cause or contribute to a significant cumulative impact to mineral resources.

4.12.7 Refences

California Department of Conservation (DOC). 2000. California Surface Mining and Reclamation Policies and Procedures, Guidelines for Classification and Designation of Mineral Lands. Accessed February 2021.

California Geological Survey (CGS). 2021. CGS Information Warehouse. Mineral Land Classification Map. https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc. Accessed July 2021.

U.S. Geological Survey (USGS). 2021. Mineral Resources Data System. https://mrdata.usgs.gov/mrds/. Accessed February 2021.

4.13 NOISE

This section identifies and evaluates issues related to Noise in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received no scoping comments regarding Noise.

4.13.1 Existing Conditions

The Project site is on three parcels of private land that total approximately 1,024 acres and is currently operated as a cattle ranch. To avoid environmental constraints, approximately 768 acres of the 1,024-acre site would be used for the Project. The Project site is surrounded by rural residential, agricultural fields, and undeveloped land. The nearest residential property lines are located directly adjacent to the southern Project boundary and the northwestern Project boundary, while a mixed residential/agricultural property line is located directly adjacent to the northern Project boundary.

Spring Valley Road runs through the Project site from north to south. The gen-tie line follows Spring Valley Road north to Walnut Drive at which point it follows Walnut Drive to PG&E's Cortina substation. The nearest community to the Project site is the city of Williams, which is located approximately 6.5 miles northeast.

4.13.1.1 Acoustic Metrics and Terminology

All sounds originate with a source, whether it is a human voice, motor vehicles on a roadway, or a combustion turbine. Energy is required to produce sound and this sound energy is transmitted through the air in the form of sound waves – tiny, quick oscillations of pressure just above and just below atmospheric pressure. These oscillations, or sound pressures, impinge on the ear, creating the sound we hear. A sound source is defined by a sound power level (abbreviated "LW"), which is independent of any external factors. By definition, sound power is the rate at which acoustical energy is radiated outward and is expressed in units of watts.

A source sound power level cannot be measured directly. It is calculated from measurements of sound intensity or sound pressure at a given distance from the source outside the acoustic and geometric near-field. A sound pressure level (abbreviated "L_P") is a measure of the sound wave fluctuation at a given receiver location and can be obtained through the use of a microphone or calculated from information about the source sound power level and the surrounding environment. The sound pressure level in decibels (dB) is the logarithm of the ratio of the sound pressure of the source to the reference sound pressure of 20 microPascals (µPa), multiplied by 20. The range of sound pressure that can be detected by a person with normal hearing is very wide, ranging from about 20 µPa for very faint sounds at the threshold of hearing, to nearly 10 million µPa for extremely loud sounds such as a jet during take-off at a distance of 300 feet.

Broadband sound includes sound energy summed across the entire audible frequency spectrum. In addition to broadband sound pressure levels, analysis of the various frequency components of the sound spectrum can be completed to determine tonal characteristics. The unit of frequency is hertz (Hz), measuring the cycles per second of the sound pressure waves. Typically, the frequency analysis examines 11 octave bands ranging from 16 Hz (low) to 16,000 Hz (high).

Since the human ear does not perceive every frequency with equal loudness, spectrally-varying sounds are often adjusted with a weighting filter. The A-weighted filter is applied to compensate for the frequency response of the human auditory system and is represented in A-weighted decibel (dBA).

Sound can be measured, modeled, and presented in various formats, with the most common metric being the equivalent sound level (L_{eq}). The L_{eq} has been shown to provide both an effective and uniform method for comparing time-varying sound levels and is widely used in acoustic assessments in the State of California. Estimates of noise sources and outdoor acoustic environments, and the comparison of relative loudness are presented in Table 4.13-1. Table 4.13-2 presents additional reference information on terminology used in the report.

Table 4.13-1. Sound Pressure Levels (L_P) and Relative Loudness of Typical Noise Sources and Acoustic Environments

Noise Source or Activity	Sound Level (dBA)	Subjective Impression
Vacuum cleaner (10 feet)	70	Moderate
Passenger car at 65 miles per hour (25 feet)	65	
Large store air-conditioning unit (20 feet)	60	
Light auto traffic (100 feet)	50	Quiet
Quiet rural residential area with no activity	45	
Bedroom or quiet living room; Bird calls	40	Faint
Typical wilderness area	35	
Quiet library, soft whisper (15 feet)	30	Very quiet
Wilderness with no wind or animal activity	25	Extremely quiet
High-quality recording studio	20	
Acoustic test chamber	10	Just audible
	0	Threshold of hearing

Adapted from: Kurze and Beranek (1988) and USEPA (1971).

Table 4.13-2. Acoustic Terms and Definitions

Term	Definition
Noise	Typically defined as unwanted sound. This word adds the subjective response of humans to the physical phenomenon of sound. It is commonly used when negative effects on people are known to occur.
Sound Pressure Level (L_P)	Pressure fluctuations in a medium. Sound pressure is measured in dB. referenced to 20 µPa, the approximate threshold of human perception to sound at 1,000 Hz.
Sound Power Level (L_W)	The total acoustic power of a noise source measured in dB referenced to picowatts (one trillionth of a watt). Noise specifications are provided by equipment manufacturers as sound power as it is independent of the environment in which it is located. A sound level meter does not directly measure sound power.

Term	Definition
Equivalent Sound Level (L_{eq})	The L_{eq} is the continuous equivalent sound level, defined as the single sound pressure level that, if constant over the stated measurement period, would contain the same sound energy as the actual monitored sound that is fluctuating in level over the measurement period.
A-Weighted Decibel (dBA)	Environmental sound is typically composed of acoustic energy across all frequencies. To compensate for the auditory frequency response of the human ear, an A-weighting filter is commonly used for describing environmental sound levels. Sound levels that are A-weighted are presented as dBA in this report.
Unweighted Decibels (dBL)	Unweighted sound levels are referred to as linear. Linear decibels are used to determine a sound's tonality and to engineer solutions to reduce or control noise as techniques are different for low and high frequency noise. Sound levels that are linear are presented as dBL in this report.
Propagation and Attenuation	Propagation is the decrease in amplitude of an acoustic signal due to geometric spreading losses with increased distance from the source. Additional sound attenuation factors include air absorption, terrain effects, sound interaction with the ground, diffraction of sound around objects and topographical features, foliage, and meteorological conditions including wind velocity, temperature, humidity, and atmospheric conditions.

4.13.1.2 Vibration Metrics and Terminology

Vibration is an oscillatory motion that is described in terms of displacement, velocity, or acceleration. Velocity is the most common descriptor used when evaluating human perception or structural damage. Velocity represents the instantaneous speed of movement and more accurately describes the response of humans, buildings, and equipment to vibrations.

Peak-Particle-Velocity (PPV) and root mean square velocity are typical metrics used to describe vibration levels in units of inches per second in the United States. However, to evaluate annoyance to humans, the vibration dB (VdB) notation is commonly used. The decibel notation acts to compress the range of numbers required to describe vibration. In the United States, the accepted velocity reference for converting to dB is $1x10^{-6}$ inches per second. The abbreviation "VdB" is used for vibration dB to reduce the potential for confusion with sound decibels.

In contrast to airborne noise, groundborne vibration is not an everyday occurrence for humans. The background vibration velocity levels within residential areas are usually 50 VdB or lower, which is well below the human perception threshold of approximately 65 VdB. However, human response to vibration is not usually significant unless the vibration exceeds 70 VdB. For a significant impact to occur, vibration levels must exceed 72 VdB during frequent events, 75 VdB for occasional events, and 80 VdB during infrequent events (FTA 2006). Outdoor sources that generate perceptible groundborne vibrations are typically construction equipment, steel-wheeled trains, and traffic on rough roadways. Table 4.13-3 provides common vibration sources as well as human and structural response to groundborne vibrations.

Table 4.13-3. Typical Levels of Groundborne Vibration

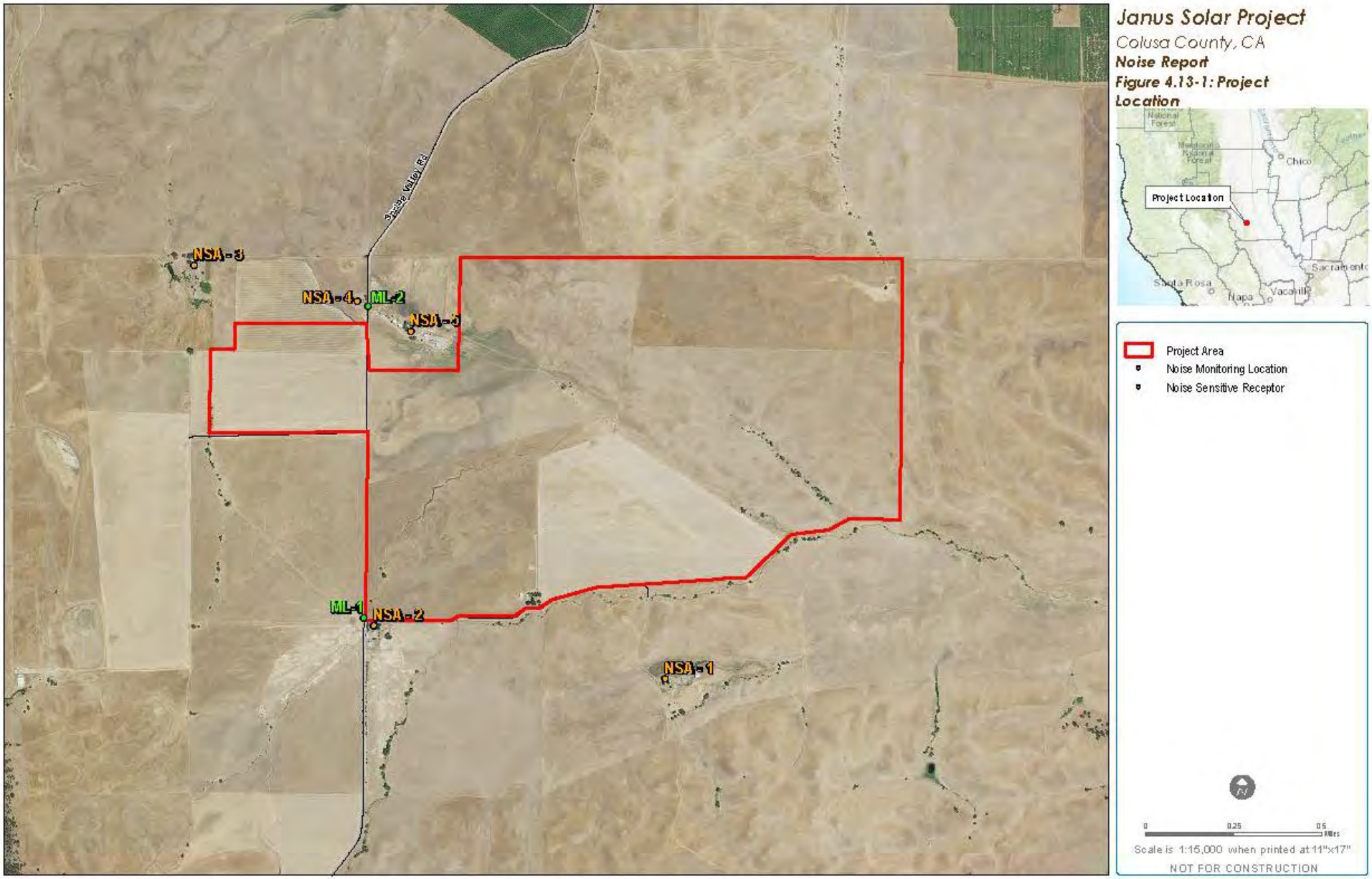
Human/Structural Response	PPV (in/sec)	Velocity Level (VdB)*	Typical sources (50 feet from source)
Threshold, Minor Cosmetic Damage, Fragile Buildings	0.4	100	Blasting from Construction Projects
	0.17-0.2	92-94	Heavy Tracked Construction Equipment
Difficulty with Tasks, Such as Reading a Computer Screen	0.125	90	
	0.074	85	Commuter Rail, Upper Range
Residential Annoyance, Infrequent Events	0.04	80	Rapid Transit, Upper Range
	0.013	75	Commuter Rail, Typical
	0.023	72	Bus or Truck Bump Over
Residential Annoyance, Frequent Events	0.013	70	Rapid Transit, Typical
Approximate Threshold of Human Perception	0.007	65	
	0.005	62	Bus or Truck, Typical
	0.0013	50	Typical Background Vibration Levels

*RMS Vibration Velocity in VdB reference to 10-6 inches/second
Source: FTA (2006)

The degree of annoyance cannot always be explained by the magnitude of the vibrations alone. Phenomena, such as groundborne noise and rattling, visual effects (e.g., movement of hanging objects), and time of day, all influence the response of individuals. The American National Standards Institute (ANSI) and the International Organization for Standardization (ISO) has developed criteria for evaluation of human exposure to vibrations. The recommendations of these standards and other studies evaluating human response to vibrations have been incorporated into the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment Manual (May 2006). The criteria within this manual are used to assess noise and vibration impacts from transit operations.

Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication, and can cause physiological and psychological stress and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. These locations are referred to as noise sensitive areas (NSAs). Places such as churches, libraries, and cemeteries, where people tend to pray, study, and/or contemplate also are NSAs. Commercial and industrial uses are considered the least noise sensitive. As shown in Figure 4.13-1, there are multiple residences near the Project site (NSA-1 through NSA-5). NSA-5 is the residence of the landowner participating in the Project, such that NSA-5 is not considered a sensitive receptor.


Janus Solar Project
Colusa County, CA
Noise Report
Figure 4.13-1: Project Location
Project Location
Chico
Sacramento
Santa Rosa
Napa
Vacaville
Project Area
Noise Monitoring Location
Noise Sensitive Receptor
NSA-3
NSA-4
ML-2
NSA-5
ML-1
NSA-2
NSA-1
Scale is 1:15,000 when printed at 11"x17"
NOT FOR CONSTRUCTION

4.13.1.3 Field Methodology

To document the existing conditions, baseline sound level measurements were performed on March 17, 2020, as described in the Sound Survey and Analysis Report provided as Appendix I. The measurement locations were selected to be representative of the surroundings of potential receptors nearest to the proposed Project site. The ambient sound survey included short-term measurements in the presence of an acoustics expert for a minimum duration of 30 minutes. The short-term measurements were made during both daytime (10:00 a.m. to 4:00 p.m.) and nighttime (10:00 p.m. to 2:00 a.m.) periods at NSAs.

4.13.1.4 Field Measurements

Two short-term, attended sound measurements were performed at public locations near residential properties proximate to the Project site. The monitoring locations (ML), ML-1 and ML-2 were selected to represent ambient conditions at land uses in the vicinity of the Project site, as shown in Figure 4.13-1 and the Sound Survey and Analysis Report provided as Appendix I.

Location ML-1 was located on Spring Valley Road approximately 2.3 miles south of Walnut Drive, and 50 feet from the southwestern Project boundary line. This location represents the closest residence to the south. During the daytime measurement period, the most prominent noise at ML-1 was generated from distant farm equipment and songbirds. During the nighttime measurement period, the most prominent noise came from distant coyotes howling and the occasion buzz from a transmission line.

Location ML-2 was located on Spring Valley Road approximately 1.3 miles south of Walnut Drive, and 250 feet from the northern Project boundary line. This location represents the closest residence to the north. During the daytime measurement period, the most prominent noise at ML-2 was generated by distant farm equipment, cattle, and occasional vehicles along Spring Valley Road. During the nighttime measurement period, the most prominent noise came from distant coyotes howling.

Table 4.13-4 provides a summary of the measured ambient sound levels observed at each of the monitoring locations for both the daytime and nighttime L_{eq}.

Table 4.13-4. Sound Measurement Results – L_{eq} Sound Levels

Monitoring Location	Time Period	L_{eq} (dBA)
ML-1	Day	32
	Night	24
ML-2	Day	34
	Night	28

4.13.2 Regulatory Setting

Federal

Federal Transit Administration and Federal Railroad Administration Standards

Although the FTA standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA Transit Noise and Vibration Impact Assessment Manual (FTA 2006) routinely are used for projects under review by local jurisdictions that have not adopted their own vibration impact standards. The FTA and Federal Railroad Administration have published guidelines for assessing the impacts of groundborne vibration associated with rail projects, which have been applied by other jurisdictions to other types of projects. The FTA's threshold of architectural damage for conventional sensitive structures from groundborne vibration is measured as 0.2 inches/second PPV or 94 VdB (decibel units of 1 micro-inch/second). The FTA measure of human annoyance at residential uses is 80 VdB for "Frequent Events," or fewer than 70 vibration events of the same kind per day.

Occupational Safety and Health Act

Under the Occupational Safety and Health Act of 1970 (29 U.S.C. §651 et seq.), the U.S. Department of Labor, OSHA adopted regulations (29 CFR §910.95) designed to protect workers against the effects of occupational noise exposure. These regulations list limits on noise exposure levels as a function of the amount of time during which the worker is exposed. The regulations further specify requirements for a hearing conservation program (§1910.95(c)), a monitoring program (§1910.95(d)), an audiometric testing program (§1910.95(g)), and hearing protection (§1910.95(i)). There are no federal laws governing community noise.

Although no federal noise regulations exist, the USEPA has published noise guidelines (USEPA 1974). The USEPA guideline recommends a Day/Night Noise Level of 55 dBA to protect the public from the effect of broadband environmental noise outdoors in residential areas and farms, and other outdoor areas where people spend widely varying amounts of time, and other places in which quiet is a basis for use (USEPA 1974).

State

Government Code Section 65302 encourages counties and cities to implement a noise element as part of the general plan. In addition, the California Governor's Office of Planning and Research has developed guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure.

The California Occupational Safety and Health Administration has published Occupational Noise Exposure Regulations (9 CCR §§5095-5099) that set employee noise exposure limits. These standards are equivalent to the federal OSHA standards described above.

In December of 2010, the CEC issued a decision for the Calico Solar Project which presented the Commission's rationale for determining to approve a license for the solar project (CEC 2010). As part of this decision, the rationale for demonstrating less than significant noise impacts include demonstration that daytime noise levels would increase by no more than 10 dBA and nighttime noise level would increase by no more than 5 dBA over ambient conditions.

Local

The Colusa County General Plan (in accordance with Government Code Section 65300 et seq.) identifies the County's vision for the future and provides a framework to guide decisions on growth, development, and conservation of open space and resources (Colusa County 2012). The County's policies regarding noise are provided in the Noise Element and are listed below:

***Policy N 1-1*:** New proposed stationary noise sources shall not result in noise levels that exceed the standards of Table N-1, as measured immediately within the property line of lands designated for noise sensitive uses.

Policy N 1-2: Ensure that noise sources do not interfere with sleep by applying an interior maximum noise level criterion (Lmax) of 45 dBA in sleeping areas, for sensitive receptors.

Policy N 1-6: Require new land use development proposals to address potential stationary and mobile noise impacts and land use incompatibilities from aircraft noise, train travel, and truck travel.

Policy N 1-12: Where noise mitigation measures are required to achieve the standards of Tables N-1 or N-2, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after all other practical design-related noise mitigation measures have been considered and integrated into the project. Landscaped berms shall be considered as a preferred mitigation option over sound walls.

Policy N 1-13: An acoustical analysis shall be prepared and submitted to the County according to the requirements of Table N-3 when:

- Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels exceeding the Table N-1 (stationary) or Table N-2 (mobile) noise level standards.
- A proposed project has the potential to create new noise levels exceeding the noise level standards of Table N-1 or Table N-2.

Policy N 1-15: As part of the review of new development projects, consider vibration impacts and require mitigation to reduce any significant adverse impacts to the maximum extent feasible and practical.

Policy N 1-16: In making a determination of impact under the California Environmental Quality Act (CEQA), a significant impact will occur if the project results in an exceedance of the noise level standards contained in the Noise Element, or the project will result in an increase in ambient noise levels by more than 3 dB.

Policy N 1-17: Require use of site design measures, such as the use of building design and orientation, buffer space, use of berms, and noise attenuation measures applied to the noise source, to reduce impacts to the maximum extent feasible and practical before mitigating noise impacts through use of sound walls. The use of sound walls or noise barriers to attenuate noise from existing noise sources is discouraged, but may be allowed if the wall is architecturally incorporated into the project design, blends into the natural landscape, and does not adversely affect significant public view corridors.

The tables in the Noise Element referred to as Table N-1 is shown below as Table 4.13-5.

Table 4.13-5. Exterior and Interior Noise Level Performance Standards for Projects Affected by or Including Non-transportation Noise Sources

Type of Use	Interior Noise Level Standard	Exterior Noise Level, Leq[1]	
		Day Time (7 a.m. to 10 p.m..)	Nighttime (10 p.m. to 7 a.m.)
All sensitive land uses	45 dB L_{max}	55 dB	45 dB
New residential affected by existing seasonal agricultural noise	40 dB L_{dn}	N/A	N/A

[1] Exterior noise level standard to be applied at the property line of the receiving land use or at a designated outdoor activity area (at the discretion of the Planning Director) of the new development. For mixed--use type projects, the exterior noise level standard may be waived (at the discretion of the Planning Director) if the project does not include a designated activity area and mitigation of property line noise is not practical. In this case, the interior standard would still apply. Each of the exterior noise levels specified above shall be lowered by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises (e.g., humming sounds, outdoor speaker systems). These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

The County can impose noise level standards that are more restrictive than those specified above based upon determination of existing low ambient noise levels.

Notes:

Fixed noise sources which are typically of concern include, but are not limited to the following:

Air Compressors
Blowers
Boilers
Cooling Towers/Evaporative Condensers
Conveyor Systems
Cutting Equipment
Drill Rigs
Emergency Generators
HVAC Systems
Fans
Gas or Diesel Motors
Gas Wells
Generators
Grinders
Heavy Equipment
Lift Stations
Outdoor Speakers
Pile Drivers
Pump Stations
Rice Dryers
Steam Turbines
Steam Valves
Transformers
Welders

The types of uses which may typically produce the noise sources described above include but are not limited to: various industrial and agricultural facilities, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive--up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, sand and gravel operations, and athletic fields

Source: Colusa County General Plan 2012

4.13.3 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the CEQA Guidelines. The proposed Project would have a significant impact to noise if it would:

a) *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;*
b) *Result in generation of excessive groundborne vibration or groundborne noise levels;*
c) *For a project 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, expose people residing or working in the project area to excessive noise levels.*

4.13.4 Impacts Analysis

IMPACT 4.13-1: *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?* **(Less than Significant Impact with Mitigation Incorporated)**

Construction and Decommissioning

The construction processes are anticipated to occur during a period of approximately 11 months and begin in late 2022. Project construction would consist of five major stages. The first stage would include mobilization, site preparation, fencing, and laydown. The second stage would involve excavation, trenching and trench backfill. The third stage includes installation of cables and utilities. The fourth stage includes construction of the inverters, PV modules, and BESS units, and also includes commissioning and testing.

Table 4.13-6 summarizes the projected noise levels at the NSAs, shown on Figure 4.13-2, due to Project construction.

Table 4.13-6. Projected Construction Noise Levels by Stage (dBA L_{eq})

Construction Stage	Equipment				Construction Noise Level, dBA					
	Equipment Type	Quantity	Usage Factor (%)	USEPA Construction Noise Level (50 feet), dBA	Project Boundary (50 feet)	NSA-1 (1,430 feet)[1]	NSA-2 (100 feet)[1]	NSA-3 (1080 feet)[1]	NSA-4 (300 feet)[1]	NSA-5 (250 feet)[1]
Preparation	Backhoes	4	40	80	93	64	87	66	76	79
	Plate Compactors	2	20	80						
	Crawler Tractors	2	40	84						
	Dump Trucks	5	40	84						
	Forklifts	2	20	85						
	Generator Sets	4	50	82						
	Graders	2	40	85						
	Scrapers	2	40	85						
	Skid Steer Loaders	4	40	80						

Construction Stage	Equipment				Construction Noise Level, dBA					
	Equipment Type	Quantity	Usage Factor (%)	USEPA Construction Noise Level (50 feet), dBA	Project Boundary (50 feet)	NSA-1 (1,430 feet)[1]	NSA-2 (100 feet)[1]	NSA-3 (1080 feet)[1]	NSA-4 (300 feet)[1]	NSA-5 (250 feet)[1]
Excavation	Backhoes	4	40	80	93	64	87	66	77	79
	Plate Compactors	2	20	80						
	Crawler Tractors	2	40	84						
	Dump Trucks	5	40	84						
	Forklifts	2	20	85						
	Generator Sets	4	50	82						
	Graders	2	40	85						
	Scrapers	2	40	85						
	Skid Steer Loaders	2	40	80						
Utilities/ Sub-grade	Backhoes	4	40	80	93	64	87	66	76	79
	Plate Compactors	2	20	80						
	Crawler Tractors	2	40	84						
	Dump Trucks	5	40	84						
	Forklifts	2	20	85						
	Generator Sets	4	50	82						
	Graders	2	40	85						
	Scrapers	2	40	85						
	Skid Steer Loaders	2	40	80						
Construction	Backhoes	7	40	84	98	69	92	71	82	84
	Bore/Drill Rigs	10	20	85						
	Cement Mixers	10	40	85						
	Forklifts	5	20	85						
	Concrete Saws	3	20	90						
	Plate Compactors	1	20	80						
	Cranes	1	16	85						
	Dump Trucks	5	40	84						
	Excavators	2	40	85						

Construction Stage	Equipment				Construction Noise Level, dBA					
	Equipment Type	Quantity	Usage Factor (%)	USEPA Construction Noise Level (50 feet), dBA	Project Boundary (50 feet)	NSA-1 (1,430 feet)[1]	NSA-2 (100 feet)[1]	NSA-3 (1080 feet)[1]	NSA-4 (300 feet)[1]	NSA-5 (250 feet)[1]
	Generator Sets	4	50	82						
	Pavers	1	50	85						
	Paving Equipment	1	40	85						
	Skid Steer Loaders	2	40	80						
	Trenchers	10	50	82						
	Rollers	1	20	85						
Paving	Rollers	1	20	85	78	50	72	51	62	64

[1]Distance to residential structure.

The construction of the Project may cause short-term, but unavoidable noise impacts that could be loud enough at times to temporarily interfere with speech communication outdoors and indoors with windows closed at NSA-2 and NSA-4, and with windows open at NSA-3 and NSA-5. The noise levels resulting from the construction activities would vary significantly depending on several factors such as the type and age of equipment, specific equipment manufacture and model, the operations being performed, and the overall condition of the equipment and exhaust system mufflers.

Project construction would occur between 7:00 a.m. and 7:00 p.m., Monday through Friday, and between 8:00 a.m. and 8:00 p.m., Saturday and Sunday in compliance with the County's Code. Furthermore, all reasonable efforts would be made to minimize the impact of noise resulting from construction activities including the implementation of standard noise reduction measures included as Mitigation Measure **NOISE-1**. Due to the infrequent nature of loud construction and decommissioning activities at the site, the limited hours of construction and the implementation of noise mitigation measure, the temporary increase in noise due to construction and decommissioning is considered to be a less than significant impact.

Operation

Noise Prediction Model

As described in the Sound Survey and Analysis Report provided as Appendix I, the Cadna-A® computer noise model was used to calculate sound pressure levels from the operation of the Project equipment in the vicinity of the Project site.

Cadna-A allows for three basic types of sound sources to be introduced into the model: point, line, and area sources. Each noise-radiating element was modeled based on its noise emission pattern. Larger dimensional sources such as the transformers and inverters were modeled as area sources. The output from Cadna-A includes tabular sound level results at selected receiver locations and colored noise contour maps (isopleths) that show areas of equal and similar sound levels.

Off-site topography was obtained using the publicly available United States Geological Survey digital elevation data. A default ground attenuation factor of 0.5 was assumed for off-site sound propagation over acoustically "mixed" ground. The Project's general arrangement was reviewed and directly imported into the acoustic model so that on-site equipment could be easily identified; buildings and structures could be added; and sound emission data could be assigned to sources as appropriate.

The primary noise sources during operations are the inverters, transformers, battery storage heating, ventilation, and air conditioning (HVAC) units, and battery storage inverters. It is expected that all equipment would operate during the daytime period. During the nighttime period the battery storage would discharge electricity resulting in the operation only of the battery storage HVAC units, battery storage inverters, and substation transformer. It is assumed that the solar panel inverters and the solar panel inverter distribution transformers would not operate during the nighttime period. Reference sound power levels input to Cadna-A were provided by equipment manufacturers, based on information contained in reference documents or developed using empirical methods. The source levels used in the predictive modeling are based on estimated sound power levels that are generally deemed to be conservative. The projected operational noise levels are based on Applicant-supplied sound power level data for the major sources of equipment. Table 4.13-7 summarizes the equipment sound power level data used as inputs to the initial modeling analysis.

Table 4.13-7. Modeled Sound Power Level (L_W) for Major Pieces of Project Equipment

Sound Source	Sound Power Level (L_P) by Octave Band Frequency dBL									Broadband Level
	31.5	63	125	250	500	1k	2k	4k	8k	dBA
Inverter Distribution Transformer	56	66	71	72	71	68	63	65	68	78
Substation Transformer	57	63	64	60	60	53	49	44	37	60
Battery Storage Inverter	67	71	74	74	74	68	65	66	61	75
Battery Storage HVAC	-	78	77	74	69	68	62	57	51	72

Broadband (dBA) sound pressure levels were calculated for expected normal Project operation assuming that all components identified previously are operating continuously and concurrently at the representative manufacturer-rated sound. It is expected that all equipment would operate during the daytime period, while only the battery storage HVAC units, battery storage inverters, and substation transformer would operate during the nighttime period. The sound energy was then summed to determine the equivalent continuous A-weighted downwind sound pressure level at a point of reception. Sound contour plots displaying broadband (dBA) sound levels presented as color-coded isopleths are provided in Figure 4.13-2 for daytime levels, and Figure 4.13-3 for the nighttime levels. The noise contours are graphical representations of the cumulative noise associated with full operation of the equipment and show how operational noise would be distributed over the area surrounding the Project site. The contour lines shown are analogous to elevation contours on a topographic map, i.e., the noise contours are continuous lines of equal noise level around some source, or sources, of noise.

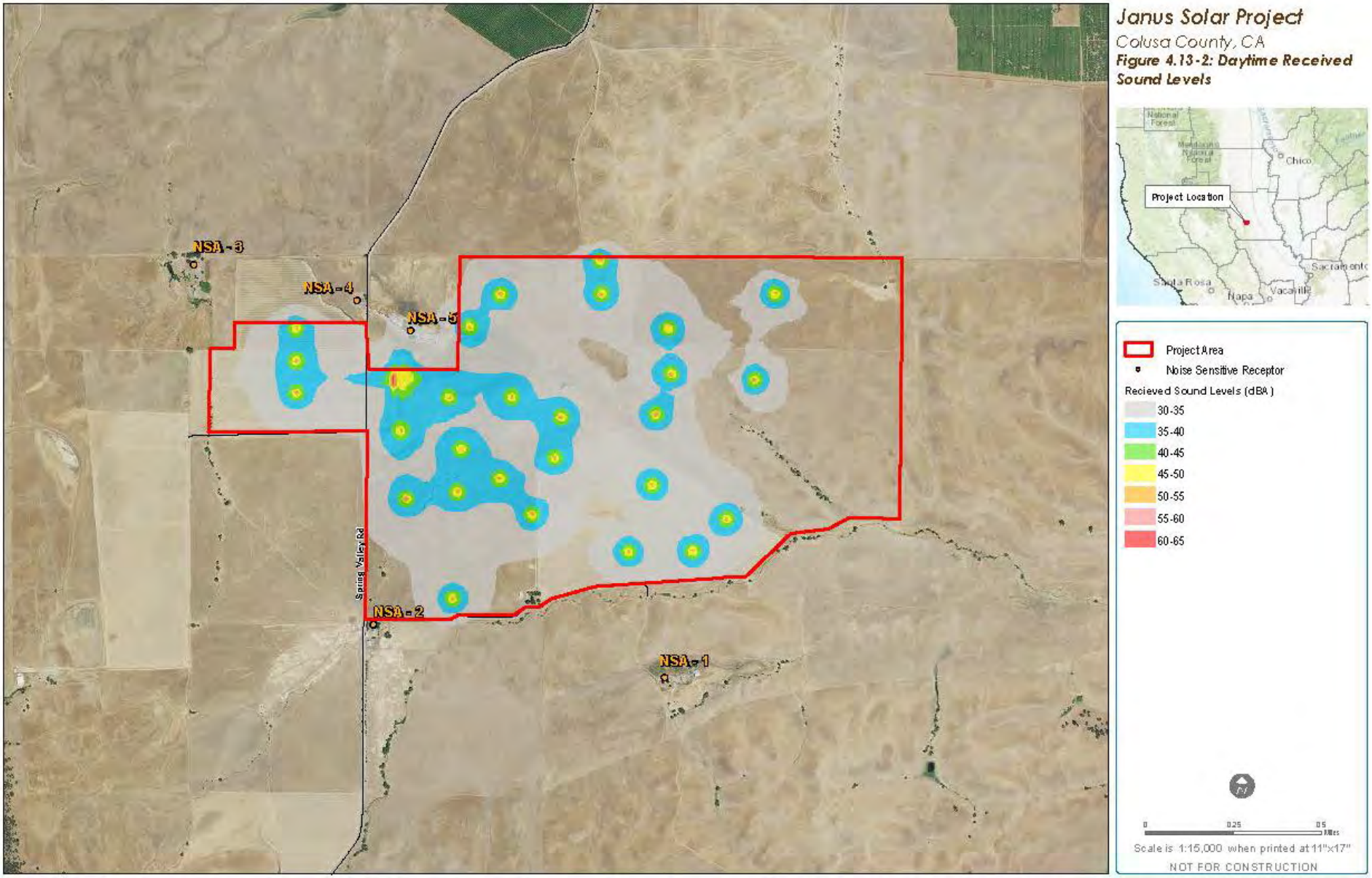


Figure 4.13-2 Daytime Received Sound Levels

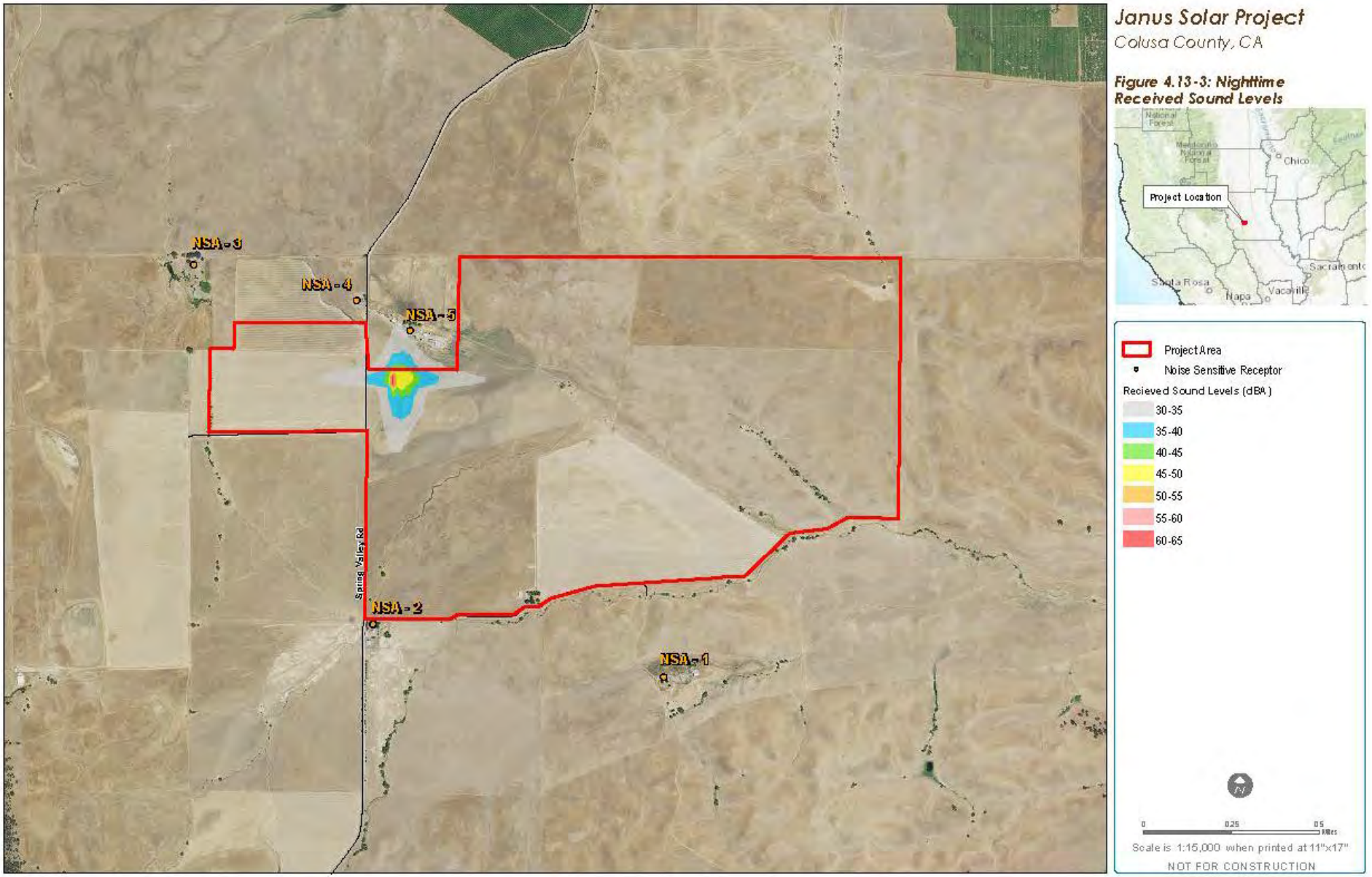


Figure 4.13-3 Nighttime Received Sound Levels

Table 4.13-8 and Table 4.13-9 show the projected exterior sound levels at the property boundary of each receptor, while Table 4.13-10 and Table 4.13-11 show the projected exterior sound levels near the residential structure of each receptor. The tables also provide the total predicted net increase in sound energy at each of the receptors.

Table 4.13-8. Daytime Acoustic Modeling Results Summary – County Limits

NSA Property Line	Participation Status	UTM Coordinates (meters)		Daytime Ambient L_{eq}, dBA	Project Sound Level, dBA	Total Sound Level (Ambient + Project), dBA
		Easting	Northing			
NSA-1	Non-participant	563475	4326765	32	27	33
NSA-2	Non-participant	562516	4326624	32	32	35
NSA-3	Non-participant	561506	4327674	34	27	35
NSA-4	Non-participant	562084	4328070	34	27	35
NSA-5	Participant	532273	4327769	34	46	46
Noise Element Exterior Daytime Noise Level Limit						55 dB
Colusa County Code Daytime Noise Level Limit						55 dB

Table 4.13-9. Nighttime Acoustic Modeling Results Summary – County Limits

NSA Property Line	Participation Status	UTM Coordinates (meters)		Nighttime Ambient L_{eq}, dBA	Project Sound Level, dBA	Total Sound Level (Ambient + Project), dBA
		Easting	Northing			
NSA-1	Non-participant	563475	4326765	24	3	24
NSA-2	Non-participant	562516	4326624	24	14	24
NSA-3	Non-participant	561506	4327674	28	16	28
NSA-4	Non-participant	562084	4328070	28	22	29
NSA-5	Participant	532273	4327769	28	45	45
Noise Element Exterior Nighttime Noise Level Limit						45 dB
Colusa County Code Nighttime Noise Level Limit						50 dB

Table 4.13-10. Daytime Acoustic Modeling Results Summary – Noise Element CEQA Threshold

NSA Structure	Participation Status	UTM Coordinates (meters)		Daytime Ambient L_{eq}, dBA	Project Sound Level, dBA	Total Sound Level (Ambient + Project), dBA	Net Increase in Sound Level, dBA
		Easting	Northing				
NSA-1	Non-participant	563489	4326375	32	17	32	0
NSA-2	Non-participant	562162	4326600	32	24	33	1
NSA-3	Non-participant	561324	4328230	34	21	34	0
NSA-4	Non-participant	562072	4328230	34	27	35	1
NSA-5	Participant	562316	4327942	34	32	36	3
Noise Element CEQA Threshold							3 dB

Table 4.13-11. Nighttime Acoustic Modeling Results Summary – Noise Element CEQA Threshold

NSA Structure	Participation Status	UTM Coordinates (meters)		Nighttime Ambient L_{eq}, dBA	Project Sound Level, dBA	Total Sound Level (Ambient + Project), dBA	Net Increase in Sound Level, dBA
		Easting	Northing				
NSA-1	Non-participant	563489	4326375	24	0	24	0
NSA-2	Non-participant	562162	4326600	24	14	24	0
NSA-3	Non-participant	561324	4328230	28	10	28	0
NSA-4	Non-participant	562072	4328230	28	21	29	1
NSA-5	Participant	562316	4327942	28	31	33	5
Noise Element CEQA Threshold							3 dB

Table 4.13-8 and Table 4.13-9 show the highest total sound levels, inclusive of ambient and project operational levels, are associated with participating receptor NSA-5, which would comply with the Colusa County Noise Element daytime threshold limit of 50 dBA, as well as the nighttime threshold of 45 dBA. Table 4.13-10 and Table 4.13-11 show compliance with the CEQA threshold (described in the Colusa County General Plan Noise Element Policy N 1-16) at all non-participating receptors, and one exceedance during the nighttime at participating receptor NSA-5; however, NSA-5 is the participating landowner on which the Project is located and is not considered a sensitive receptor.

A 3-mile-long overhead, 60 kV transmission line would be located partially on the Colusa County's right-of-way on Walnut Drive and Spring Valley Road and partially on private land from the Project Site to the point of interconnection at the Cortina Substation. When a transmission line is in operation, an electric field is generated in the air surrounding the conductors, forming a corona. The corona results from the partial breakdown of the electrical insulating properties of the air surrounding the conductors. When the intensity of the electric field at the surface of the conductor exceeds the insulating strength of the surrounding air, a corona discharge occurs at the conductor surface, representing a small dissipation of heat and energy. Some of the energy may dissipate in the form of small local pressure changes that result in audible noise or in radio or television interference. Audible noise generated by corona discharge is characterized as a hissing or crackling sound that may be accompanied by a 120 Hz hum. Slight irregularities or water droplets on the conductor and/or insulator surface accentuate the electric field strength near the conductor surface, thereby making corona discharge and the associated audible noise more likely. Therefore, audible noise from transmission lines are generally a foul-weather phenomenon that results from wetting of the conductor. However, during fair weather, insects and dust on the conductors can also serve as sources of corona discharge.

The Electric Power Research Institute has conducted several studies of corona effects (EPRI 1978, 1987). The typical noise levels for transmission lines with wet conductors are shown in Table 4.13-12.

Table 4.13-12. Transmission and Subtransmission Line Voltage and Audible Noise Levels

Line Voltage (kV)	Audible Noise Level Directly Below the Conductor (dBA)
138	34
240	40
360	51

As shown in Table 4.13-12, the audible noise associated with transmission lines decreases as the line voltage decreases; the audible noise associated with the 60-kV line is lower than 34 dBA. This noise level of the 60 kV line would comply with the County's noise limits. Operational noise associated with the Project would be less than significant.

IMPACT 4.13-2: *Would the project result in generation of excessive groundborne vibration or groundborne noise levels?* **(Less than Significant Impact)**

Vibration levels for activities associated with Project construction were based on the average of PPV source levels published with the FTA Noise and Vibration Manual (FTA 2006), which documents several types of construction equipment measured under a wide variety of construction activities. Using the documented vibration levels as input into a basic propagation model, construction vibration levels were calculated at the nearest Project site boundary and then at the NSA structure. Vibration levels for decommissioning are anticipated to be similar to those for construction.

Project construction would be completed in three work stages. This vibration level evaluated the worst-case vibration source, which would be the roller. Based on vibration propagation calculations, construction vibration levels are predicted to range from 0.0007 PPV inches per second (in/sec; 45 VdB) to 0.0263 PPV in/sec (76 VdB) dBA at the NSAs. These levels are based on the worst-case vibration producing equipment and it is expected that other vibration generating equipment proposed for the Project construction would result in lower vibration levels. Table 4.13-13 summarizes the predicted vibration levels at each of the NSAs based on the highest vibration generating equipment. As shown in Table 4.13-13, vibration levels may be perceptible at the nearest sensitive receptors but will be below the maximum vibration level of 80 VdB. This level is considered acceptable for impacts to sensitive receptors.

Project operation is not anticipated to generate groundborne noise or vibration. The Project does not propose the use of heavy equipment during Project operation that would introduce any new sources of perceivable groundborne vibration; therefore, there is no potential for significant vibration impacts resulting from Project operations.

The impacts of groundborne noise and vibration would be less than significant.

Table 4.3-13. Projected Construction Vibration Levels

Construction Operation	Vibration Level Metric	Project Boundary (50 feet)	NSA-1 (1,430 feet)[1]	NSA-2 (100 feet) [1]	NSA-3 (1,080 feet) [1]	NSA-4 (300 feet) [1]	NSA-5 (250 feet)[1]
Roller	PPV in/sec	0.0743	0.0005	0.0263	0.0007	0.0051	0.0067
	VdB	85	41	76	45	62	64

[1] Distance to residential structure.

IMPACT 4.13-3: *For a project within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?* **(No impact)**

The Project is not within 2 miles of a public airport or public use airport or in the vicinity of a private airstrip or an airport land use plan. There would be no impact.

4.13.5 Mitigation Measures

The following mitigation measures are recommended to reduce significant impacts to noise resources.

NOISE-1: The Project shall implement the following construction management protocols to minimize noise impacts during construction:

- Maintain all construction tools and equipment in good operating order according to manufacturers' specifications;
- Limit use of major excavating and earth-moving machinery to daytime hours;
- To the extent practicable, schedule construction activity during normal working hours on weekdays when higher sound levels are typically present and are found acceptable. Some limited activities, such as concrete pours, would be required to occur continuously until completion;
- Equip any internal combustion engine used for any purpose on the job or related to the job with a properly operating muffler that is free from rust, holes, and leaks;
- For construction devices that utilize internal combustion engines, ensure the engine's housing doors are kept closed, and install noise-insulating material mounted on the engine housing consistent with manufacturers' guidelines, if possible;
- Limit possible evening shift work to low noise activities such as welding, wire pulling, and other similar activities, together with appropriate material handling equipment; and
- Utilize a Complaint Resolution Procedure to address any noise complaints received from residents.

4.13.6 Pacific Gas and Electric Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina Substation bay. The improvements would include the installation of a grounding system,

disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements made would be within the existing Cortina Substation footprint.

Construction associated with the Cortina Substation improvements has the potential to generate noise. Operation of the Cortina Substation Improvements would not appreciably increase noise above ambient levels and the current substation operations. The construction activities associated with the PG&E infrastructure would be required to comply with, and adhere to, the same mitigation measures as the rest of the Project components. Through the implementation of **Mitigation Measure NOISE-1** these improvements would not have a substantial adverse effect on noise, and no additional mitigation measures would be required.

4.13.7 Cumulative Impacts

Cumulative impacts should consider the effects of existing, current and reasonably foreseeable future projects. As noted above, the proposed Project is shown to not significantly increase the overall ambient community noise level and would not expose persons to or generate excessive groundborne vibration or groundborne noise.

There are no cumulative projects close enough to the proposed Project to potentially result in a cumulative noise impact, such that the Project would not significantly contribute to any impact to noise, groundborne vibration, or groundborne noise.

4.13.8 References

California, Energy Commission (CEC), 2010. Calisco Solar Power Project Commission Decision 2010-012-CMF, Sacramento, California.

Electrical Power Research Institute (EPRI). 1978. Transmission Line Reference Book, 115-138 kV.

EPRI. 1987. Transmission Line Reference Book, 345 kV.

Colusa County. 2012. Colusa County General Plan Noise Element.

Federal Transit Authority (FTA). 2006. Transit Noise and Vibration Impact Assessment Manual.

Kurze, U. and L. Beranek. 1988. Noise and Vibration Control. Institute of Noise Control Engineering, Washington, DC.

United States Environmental Protection Agency (USEPA). 1971. Technical Document NTID300.1, Noise from Construction Equipment and Operations, US Building Equipment, and Home Appliances. Prepared by Bolt Beranek and Newman for USEPA Office of Noise Abatement and Control, Washington, DC. December 1971.

U.S. Environmental Protection Agency (USEPA), 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. March 1974.

4.14 POPULATION/HOUSING

This section identifies and evaluates issues related to Population and Housing in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received no scoping comments regarding Population and Housing.

4.14.1 Existing Conditions

4.14.1.1 Population

The Project site is located in unincorporated Colusa County approximately 6.5 miles southwest of the city of Williams. The mean commute time in Colusa County is 25.7 minutes (U.S. Census 2021). It is reasonable to assume that construction workers may drive approximately 50 miles to the Project site during construction, operation, or decommissioning from the surrounding counties of Butte, Glenn, Lake, Sutter, and Yolo.

The study area includes Colusa County and the surrounding counties listed in Table 4.14-1. Population characteristics for counties in the study area are included in Table 4.14-1. Population estimates and projections are not available for unincorporated communities; therefore, unincorporated communities are not included in the table below.

As demonstrated by Table 4.14-1, most of the counties within the study area have experienced moderate amounts of growth between 2000–2019. In 2019, Colusa County had an estimated population of 21,547 representing an approximate 0.7 percent increase from the 2010 population of 21,419 (U.S. Census 2021). The city of Williams had a higher rate of growth during the 2010–2019 period, but its actual growth was only 314 persons. The city of Colusa had an estimated population of 6,060 in 2019, an approximate 2.6 percent decrease from 2010 (U.S. Census 2021).

Table 4.14-1. Historic Population Growth, 2000–2019

Area	2000	2010	2019
Colusa County	18,804	21,419	22,248
Glenn County	26,453	28,122	29,679
Butte County	203,171	220,000	202,669
Yolo County	168,660	200,849	217,500
Lake County	58,325	64,665	63,940
Sutter County	78,930	94,737	101,289

Source: California DOF 2021

4.14.1.1.1 Housing

Table 4.14-2 outlines housing data for Colusa County and the surrounding counties in 2020. Vacancy rates for these jurisdictions ranged from 3.8 percent (Yolo County) to 22.6 percent (Lake County). In 2020, Colusa County had an estimated 8,227 housing units with a vacancy rate of 6.7 percent such that there were 716 vacant housing units.

Table 4.14-2. 2020 Housing Data Estimates

	Total Housing Units	Occupied Housing Units	Vacancy Rate (percent)
Colusa County	8,227	7,510	8.7
Glenn County	11,334	10,437	7.9
Butte County	86,122	80,141	6.9
Yolo County	78,377	75,419	3.8
Lake County	34,418	26,639	22.6
Sutter County	34,498	32,178	6.7

Source: California DOF 2021.

The number of households is expected to increase by 7 percent in Colusa County over the period from 2020–2028 (Colusa County 2020).

4.14.1.1.1.1 Temporary Housing

Colusa County currently has over 11 full-service hotels and motels, including 8 motels in western Colusa County (Trip Advisor 2021; Visit Colusa County 2021). East Park Reservoir, Colusa-Sacramento River State Recreation Area, and the Mendocino National Forest provides tent and recreational vehicle campgrounds which are available for temporary housing accommodations (Colusa County 2021).

4.14.2 Regulatory Setting

4.14.2.1 Federal

No federal statutes, regulations, plans, or policies govern Population and Housing-related considerations on the Project site.

4.14.2.2 State

No state statutes, regulations, plans, or policies govern Population and Housing-related considerations on the Project site.

4.14.2.3 Local

The Colusa County General Plan Housing Element was last updated in 2020 and includes goals, policies, and programs related to Population and Housing to meet the state's Regional Housing Needs Assessment allocation of 526 new housing units needed between 2019 and 2028 (Colusa County 2020). The following policies from the Housing Element Update are relevant to the Project:

> ***Policy CC 2-68:*** *Encourage commercial, industrial, and other job-generating land uses, particularly in locations that are readily accessible by I-5.*
>
> ***Policy HO-23:*** *Encourage economic development and job-housing balance efforts*

4.14.3 Thresholds of Significance

A project would result in significant impacts to population and housing if it would:

a) Induce substantial unplanned population growth in the area either directly (for example, by proposing new homes or businesses) or indirectly (for example, through the extension or roads or other infrastructure); or

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

4.14.4 Impact Analysis

IMPACT 4.14-1: *Would the project induce substantial unplanned population growth in the area either directly (for example, by proposing new homes or businesses) or indirectly (for example, through the extension or roads or other infrastructure)?* **(Less than significant)**

Construction of the Project is anticipated to employ a maximum of 200 on-site personnel. The average number of workers on-site is anticipated to be approximately 50 to 150, depending on the construction activity. The duration of construction requiring the peak workforce is expected to be approximately 5 days per week during the 11-month construction period. Decommissioning and site restoration activities are expected to require a similar or smaller workforce than construction and conservatively also take 11 months.

As described in the County's General Plan Section 2, *Construction Schedule and Workforce*, based on the demographic profile of Colusa County it is anticipated that a majority of the construction workforce would be hired from the existing workforce in the Colusa regional area.

The California Employment Development Department estimated that the annual average unemployment rate in Colusa County in May 2021 was approximately 11.2 percent (not seasonally adjusted) compared to the statewide unemployment rate of 7.9 percent (CEDD 2021c). In 2015, the construction industry employed an average of 765 individuals in Colusa County. Four years later the number of individuals employed in the construction industry gradually increased, reaching 1,132 individuals at the end of the 4th quarter of 2020 (CEDD 2020d). Employment in Colusa County rapidly declined during 2020 due to the COVID-19 pandemic. The annual employment average for 2020 was only 8,820 persons employed in Colusa County with an unemployment rate of 16.0 percent (CEDD 2021b). Project job growth for the North Valley Region of California which includes Colusa, Glenn, and Tehama counties, estimates a 4.4 percent increase for the period of 2018–2028 (CEDD 2021a).

The Project is anticipated to generate a smaller number of highly specialized jobs for the operation of the photovoltaic and battery energy storage system site.

Colusa County is expected to increase housing by 526 units between 2019 and 2028 (Colusa County 2020). The Project is not anticipated to increase the need for additional housing units as workers would be expected to commute to the site from local and regional towns and cities, rather than relocate. Therefore, construction, operation, and decommissioning of the Project is not expected to require substantial numbers of new housing units, the construction of which could cause environmental impacts. As a result, the Project is not expected to induce population growth directly or indirectly.

The additional electricity availability generated by the Project is not expected to induce substantial population growth in Colusa County or elsewhere. The electricity would be distributed by PG&E

and is anticipated to fulfill existing demand rather than generate additional demand due to potential inducement of growth. Therefore, the energy produced by the Project would not directly or indirectly encourage new development or induce population growth.

Mitigation: None required.

IMPACT 4.14-2: *Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?* **(No Impact)**

The Project site is undeveloped land used for cattle grazing. There is one residence within one of the parcels included in the Project; however, this portion of the parcel is not included in the Project area and will be retained by the owner as a residence. The Project would not require the removal of any housing units. Therefore, there would be no potential to displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

Mitigation: None required.

4.14.5 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina Substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. It is anticipated that a majority of the construction workforce would be hired from the existing workforce in the Colusa regional area. In addition, no changes to the operation workforce would occur due to these upgrades. The improvements made would be within the existing Cortina Substation footprint, and therefore would not require the removal of any housing units. The improvements would not affect the population or housing occupancy of Colusa County. Additionally, the PG&E improvements would not have an impact on significance criteria 4.14-1 and 4.14-2. No mitigation would be required.

4.14.6 Cumulative Impacts

As discussed above, there would be no impact with respect to the potential displacement of people or existing housing. Therefore, neither the Project nor the alternatives would cause or contribute to any potential cumulative impact to threshold.

The geographic context for the cumulative impacts associated with the potential inducement of population growth includes the surrounding counties of Butte, Glenn, Lake, Sutter, and Yolo. The temporal scope of potential cumulative impacts would include construction, operation and maintenance, and decommissioning phases of the Project. Cumulative effects could result from the combination of the incremental impacts of the Project with ongoing impacts of past projects as well as the other present and reasonably foreseeable future projects developed within the geographic scope.

The other present and reasonably foreseeable future projects are summarized in Table 2-1. Because there are many factors than can affect the maximum workforce required for any

particular project, it is difficult to estimate employment levels (or their potential to overlap) with any certainty. For example, the Project would require a maximum of 200 workers at the peak of construction. In general, solar photovoltaic projects do not induce substantial population growth as they do not create substantial numbers of permanent jobs. Therefore, the Project, in combination with other projects in the cumulative scenario (even if construction in the immediate area were to occur simultaneously), would not be likely to induce migration or population growth. Additionally, the County's General Plan governs growth, development, and land use decisions within the County's jurisdiction and all development proposed within the County must occur consistent with its provisions. Therefore, construction of this Project together with the cumulative scenario projects, and other development within the geographic area of cumulative concern, would not result in substantial direct or indirect unplanned population growth. There would be no significant, adverse, cumulative impact relating to the potential inducement of population growth to which the Project would contribute.

4.14.7 References

California Department of Finance (California DOF). 2012. E-4 Population Estimates for Cities, Counties, and the State, 2001-2010, with 2000 & 2010 Census Counts. https://www.dof.ca.gov/Forecasting/Demographics/Estimates/e-4/2001-10/. Accessed February 2021.

California DOF. 2021. *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2011-2021*. https://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/. Accessed February 2021.

California Employment Development Department (CEDD). 2021a. 2018-2028 Local Employment Projections Highlights. https://www.labormarketinfo.edd.ca.gov/data/employment-projections.html. Accessed June 2021.

CEDD. 2021b. Labor Force and Unemployment Rate for Cities and Census Designated Places (Colusa County). https://www.labormarketinfo.edd.ca.gov/data/labor-force-and-unemployment-for-cities-and-census-areas.html. Accessed June 2021

CEDD. 2021c. Monthly Labor Force Data for Counties. https://www.edd.ca.gov/newsroom/unemployment-may-2021.htm. Accessed June 2021.

CEDD. 2021d. Quarterly Census of Employment and Wages (QCEW). https://www.labormarketinfo.edd.ca.gov/geography/colusa-county.html. Accessed June 2021.

Colusa County. 2020. Colusa County Housing Element Update 2020-2028. https://www.countyofcolusa.org/DocumentCenter/View/13433/2020-to-2028-Colusa-County-Housing-Element-Update---Approved?bidId=. Accessed February 2021.

Colusa County. 2021. Colusa County Business Directory. https://www.countyofcolusa.org/BusinessDirectoryII.aspx?lngBusinessCategoryID=25. Accessed February 2021.

Trip Advisor. 2021. Williams Hotels and Places to Stay. https://www.tripadvisor.com/Hotels-g33272-Williams_California-Hotels.html. Accessed February 2021.

Visit Colusa County. 2021. Campgrounds. https://visitcolusacounty.com/reservations/. Accessed February 2021.

U.S. Census Bureau. 2021. QuickFacts (Colusa County, CA). https://www.census.gov/quickfacts/colusacountycalifornia. Accessed February 2021.

4.15 PUBLIC SERVICES

This section identifies and evaluates issues related to Public Services in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County did not receive any scoping input regarding Public Services.

4.15.1 Existing Conditions

The setting for Public Services includes the service areas of the police protection, fire protection, schools, parks, library, and medical providers that would serve the Project.

Fire Protection

The Williams Fire Protection Authority would provide fire services to the Project site. The station is located at 810 E Street in the city of Williams and is approximately 12 miles from the Project site.

Police Protection

The Project site would be serviced by the Colusa County Sheriff's Department. The Sheriff's department is located at 929 Bridge Street in the city of Colusa and is approximately 16 miles from the Project site.

Schools

The Project site is located within the Williams Unified School District which operates one elementary school, one upper elementary school, and one junior/senior high school (Williams Unified School District 2021). The nearest school is Williams Elementary School which is 6.1 miles northeast of the Project site. Williams Upper Elementary School is approximately 6.3 miles from the Project site, and Williams Junior Senior High School is approximately 6.4 miles from the Project site.

Parks

Recreational opportunities within Colusa County include County parks, National Wildlife Refuge areas, State Recreation Areas, and other facilities. The Northview Park is the nearest park, 11.3 miles from the Project site. The Colusa National Wildlife Refuge is located approximately 13 miles northwest of the Project. Parks and other recreational resources are discussed further in Section 4.16*, Recreation.*

Other Public Facilities

The Williams Public Library is located approximately 6.5 miles northeast of the Project site. The nearest public medical facility is the Colusa Medical Center located at 199 E Webster Street in the city of Colusa, approximately 15.1 miles northeast of the Project site.

4.15.2 Regulatory Setting

4.15.2.1 Federal

No federal statutes, regulations, plans, or policies apply to the Project site.

4.15.2.2 State

No state statutes, regulations, plans, or policies apply to the Project site.

4.15.2.3 Local

4.15.2.3.1 Colusa County General Plan

The Public Services and Facilities Element of the Colusa County General Plan contain the following goals and policies related to fire protection, police protection, schools, parks, and other public services (Colusa County 2012):

> ***Policy PSF 3-12:*** *Encourage the incorporation of crime prevention measures into the design of new development and retrofit of existing development. Such measures may include security lighting, fencing, maximizing visibility, access control, and other appropriate measures.*

4.15.3 Thresholds of Significance

A project would result in significant impacts to public services if it would:

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

- *i. Fire protection*
- *ii. Police protection*
- *iii. Schools*
- *iv. Parks*
- *v. Other public facilities*

4.15.4 Impact Analysis

IMPACT 4.15-1: *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

i) Fire protection

No Impact. The Williams Fire Protection Authority would provide fire services to the Project site. The station is located at 810 E Street in the city of Williams and is approximately 12 miles from the Project site. The Project would be designed in compliance with federal, state, and local worker safety and protection codes and regulations which would minimize the potential for the occurrence of fire. The Project is not anticipated to contribute an increase in population that would cause an increase in the demand for fire protection.

Project maintenance and operation may introduce potential ignition sources such as transformers, electric transmission line (including gen-tie inline), substations, maintenance vehicles, and gas/electric-powered machinery. The proposed inverters and photovoltaic arrays may also be identified as a potential ignition source. However, the potential fire risk is low for these Project components. All battery components for the battery energy storage system would be installed on concrete pads and contained within an enclosure to minimize the potential for sparks or ignition. All such enclosures would be equipped with a fire suppression system.

Therefore, the proposed Project is not expected to result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services.

ii) Police protection

No Impact. The Project site would be serviced by the Colusa County Sheriff's Department. The Project is not anticipated to contribute an increase in population that would increase the demand for police protection. No new residences are proposed as part of the Project. The construction and operation of the Project would not substantially increase the demand for police services.

The facility would be secured with chain link fencing along the perimeter of the Project site. Access to the facility would be provided by individual site entry points. Controlled security lighting would be installed and would allow for the Project site to be monitored remotely. Lights would be installed at substations for maintenance and security purposes.

By implementing these measures, the Project would not result in any substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police services.

iii) Schools

No Impact. The nearest school is Williams Elementary School which is 6.1 miles away from the Project site at 1404 E Street in the city of Williams. The Project is not anticipated to contribute an increase in population or the associated potential increase in school-aged children, and therefore would not result in any increase demand for schools.

Thus, the Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for schools.

iv) Parks

No Impact. The nearest park from the Project site is 11.3 miles from the Project site. The Northview Park is located at 180 Virginia St., Williams, CA 95987. The Project is not anticipated to contribute an increase in population, and therefore would not result in any increase demand for park facilities.

Thus, the proposed Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any park services. Parks and other recreational resources are discussed further in Section 4.16, Recreation.

v) Other public facilities?

No impact. The Project is not anticipated to contribute to increased population growth. It is not anticipated that the demand for public facilities such as libraries or parks would be created. Therefore, the Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any other public facilities.

Mitigation: None required.

4.15.5 PG&E Cortina Substation Improvement

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina Substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements made would be within the existing Cortina Substation footprint. These improvements would not increase demand for public services. Additionally, there would be no need for improvements or construction to schools, parks, police and fire stations, or other public facilities. Therefore, the PG&E improvements would not have an adverse impact on public services or facilities. No mitigation would be required as a result of these improvements.

4.15.6 Cumulative Impacts

As discussed above, there would be no impact with respect to the provision of new or physically altered fire or police protection, school, medical, or other public service facilities. The Project would not cause or contribute to any cumulative impact related to these services.

4.15.7 References

Colusa County. 2012. General Plan. Adopted July 31, 2012.

Williams Unified School District. 2021. https://www.williamsusd.net/s_c_h_o_o_l_s. Accessed February 16, 2021.

4.16 RECREATION

This section identifies and evaluates issues related to Recreation in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County did not receive any scoping comments related to Recreation.

4.16.1 Existing Conditions

Recreational opportunities within Colusa County include County parks, National Wildlife Refuge areas, State Recreation Areas, and other facilities. The majority of recreational resources are located within the northeastern portion of the County. Smaller, local recreational facilities in Colusa County within 10 miles of the Project are listed in Table 4.16-1, and the largest recreational facilities that serve the County within 20 miles of the Project site are described in detail below.

Table 4.16-1. Recreation Facilities within 10 miles

Facilities	Managing Agency	Distance (Miles)
Williams Community Pool	City of Williams Park and Recreation	6.3
North View Park	City of Williams Park and Recreation	6.3
Valley Vista Park	City of Williams Park and Recreation	7.3
Venice Park	City of Williams Park and Recreation	6.0
Sierra Oaks Park	City of Williams Park and Recreation	7.3
Sacramento Valley Museum	City of Williams Park and Recreation	6.1

4.16.1.1 Colusa National Wildlife Refuge

The Colusa National Wildlife Refuge is located approximately 13 miles northwest of the Project site. It was established in 1945 as a refuge and breeding ground for migratory birds and other wildlife and to reduce damage of agricultural crops caused by waterfowl. The refuge lies in the Colusa Basin and is bisected by the Colusa Basin Drain, which drains the basin southeast to the Sacramento River (USFWS 2016).

The Colusa National Wildlife Refuge provides recreational opportunities in the form of wildlife viewing and photography during an established 3-mile auto tour through the wetlands or trail hiking. A portion of the Colusa National Wildlife Refuge is open for waterfowl and pheasant hunting seasonally as part of the Sacramento Complex National Wildlife Refuge Hunt Program (USFWS 2021).

4.16.1.2 Delevan National Wildlife Refuge

The Delevan National Wildlife Refuge is located approximately 15 miles northwest of the Project site. Portions of the Delevan National Wildlife Refuge are open seasonally for waterfowl and upland game bird hunting, including geese, ducks, coots, moorhens, snipe, pheasant, and turkey. The Delevan National Wildlife Refuge is not open to the public for hiking or wildlife viewing (USFWS 2018).

4.16.1.3 East Park Reservoir

East Park Reservoir is located approximately 15 miles northeast of the Project site. The facility is owned by Colusa County and is operated by Colusa County's Parks and Recreation Division of

the Public Works Department. Recreational activities at the East Park Reservoir include hiking, camping, horseback riding, and boating (Colusa County 2021).

4.16.1.4 Colusa-Sacramento River State Recreation Area

The Colusa-Sacramento River State Recreation Area is located 15 miles northwest of the Project site. Recreational opportunities at this facility include fishing, boating, camping, and use of trails for hiking, running, and wildlife viewing (California Department of Parks and Recreation 2021).

4.16.2 Regulatory Setting

4.16.2.1 Federal

No federal regulations pertaining to Recreation apply to the Project.

4.16.2.2 State

No state regulations pertaining to Recreation apply to the Project.

4.16.2.3 Local

The Colusa County General Plan Open Space and Recreation Element discusses policies to enhance recreational opportunities in the County by encouraging further development of public and private recreational opportunities. The following policies would apply to the Project:

> ***Policy OSR 1-1:*** The following General Plan Land Use designations shall be considered Open Space uses: Resource Conservation (RC), Designated Floodway (DF), Parks and Recreation (PR), Agriculture General (AG), and Agriculture Upland (AU).
>
> ***Policy OSR 1-5:*** New development should be designed and constructed to preserve open space features such as scenic corridors, wetlands, riparian vegetation, native vegetation, trees, and natural resources where feasible and appropriate.
>
> ***Policy OSR 1-8:*** Conversion of open space to developed commercial, industrial, or other non-residential job-generating uses may be allowed if needed to support economic development.
>
> ***Policy OSR 2-9:*** Ensure private landowners continue to have the right to offer hunters access to their land during hunting seasons

4.16.3 Thresholds of Significance

A project would result in significant effects on the environment if it would:

a) *Increase the use of existing neighborhood and regional parks or other recreational facilities such as substantial physical deterioration of the facility would occur or be accelerated?*

b) *Include recreational facilities or require the constructions or expansion of recreational facilities which might have an adverse physical effect on the environment?*

4.16.4 Impact Analysis

IMPACT 4.16-1: *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such as substantial physical deterioration of the facility would occur or be accelerated?* (**No Impact**)

Increases in use of recreational facilities typically are associated with substantial increases in population or a substantial reduction in the availability of existing parks or other recreational facilities. The Project site is not located within or adjacent to a residential area, or within the immediate vicinity of any parks or recreational facilities, and there no parks or existing recreational facilities located on the site. No residential facilities are proposed as part of the Project. Therefore, population growth is not expected, and the use of parks and other regional facilities is not anticipated.

During construction, new construction jobs would be generated temporarily, and workers would come from the surrounding community relative to the Project site. Thus, there would be no increased use of local and regional parks or recreational facilities that would lead to substantial physical deterioration.

Mitigation: None required.

IMPACT 4.16-2: *Does the project include recreational facilities or require the constructions or expansion of recreational facilities which might have an adverse physical effect on the environment? (***No Impact)**

The Project would develop an 80-megawatt solar PV Facility, including an 80-megawatt BESS. The Project would not include any type of residential development with a need for recreational facilities, as described in **Impact 4.16-1**. Therefore, the Project would not develop recreational facilities that may have an adverse physical effect on the environment.

Mitigation: None required.

4.16.5 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's generation-tie line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina Substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the generation-tie line. The improvements made would be within the existing Cortina Substation footprint. These improvements would not lead an increase in population resulting in the deterioration or excessive use of parks and recreation facilities during construction or operation of the Project. Additionally, there would be no need to construct or expand recreational facilities. Therefore, there would be no impacts to park and recreation facilities. No mitigation is required.

4.16.6 Cumulative Impacts

As described above, the Project would result in no impact to Recreation. Therefore, the Project would not cause or contribute to a significant cumulative impact to Recreation.

4.16.7 References

California Department of Parks and Recreation. 2021. Colusa-Sacramento River State Recreation Area. http://www.parks.ca.gov/?page_id=461. Accessed February 2021.

Colusa County. 2021. Colusa County East Park Reservoir. https://visitcolusacounty.com/reservations/. Accessed February 2021.

U.S. Fish and Wildlife Services (USFWS). 2016. About Colusa National Wildlife Refuge. https://www.fws.gov/refuge/Colusa/about.html. Accessed February 2021.

USFWS. 2018. Delevan National Wildlife Refuge (California). https://www.fws.gov/refuge/delevan/. Accessed February 2021.

USFWS. 2021. Waterfowl Hunting on Complex. https://www.fws.gov/refuge/Sacramento/visit/hunting.html. Accessed February 2021.

4.17 TRANSPORTATION

This section identifies and evaluates issues related to Transportation in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received scoping comments relating to Transportation from the California Department of Transportation, and those comments have been incorporated into the Draft EIR.

A separate Level of Service (LOS) and Vehicle Miles Traveled (VMT) Assessment was prepared for the proposed Project and is provided as Appendix J of this Draft EIR. The following discussion includes summaries and provides specific discussions of results and conclusions.

4.17.1 Existing Conditions

SR 20 runs as close as 1 mile from the Project site, to the north and west. I-5 runs north to south, approximately 7.2 miles east of the Project site. The western portion of the site is intersected by Spring Valley Road, an undivided, two-lane County road. Walnut Drive, also a two-lane, undivided County road, provides access from Spring Valley Road to SR 20 north of the Project site.

4.17.1.1 Environmental Setting

4.17.1.1.1 Major Highways

SR 20 is a two-lane undivided highway that provides a connection between I-5 and the area surrounding the Project site. According to the most recent data published by Caltrans, the average annual daily traffic volume on SR 20 in the vicinity of the Project site is approximately 5,900 vehicles, with up to approximately 590 vehicles during the peak traffic hour (Caltrans 2019).

I-5 is a north-south interstate highway that extends from the Mexican border to the Canadian border and provides access for goods movement, shipping, and travel. Access to the Project site from I-5 is provided via SR 20. Because of the site's rural location, current traffic on the roads immediately adjacent to the Project is light. The Caltrans data available for Colusa County includes I-5 and SR 20. I-5 included 30,800 vehicles per day, and SR 20 included 5,900 vehicles per day within Colusa County (Caltrans 2019). Near the Project location the roads are rural without dedicated turn lanes. The existing traffic is expected to be light, and based on experience with similar projects, rural roads like these are estimated to have between 500 and 800 vehicles per day, or less than 100 vehicles during peak hour (Tetra Tech 2021).

4.17.1.1.2 Local Roads

Spring Valley Road is a two-lane undivided County road that provides access from the site via Walnut Drive to SR 20, and most vehicle trips generated by the Project would travel through the intersection of Spring Valley Road and Walnut Drive to get to the Project site. Travelers from Colusa and Williams would be expected to access the site from SR 20 via East Camp Road, to Beauchamp Road, which transitions to Walnut Drive. There are no dedicated turn lanes onto or off of Spring Valley Road or Walnut Drive in the vicinity of the Project site. Average annual daily traffic and peak hour volumes on Spring Valley Road and Walnut Drive are not available.

4.17.2 Regulatory Setting

4.17.2.1 Federal

There are no federal regulations that apply to the Project.

4.17.2.2 State

4.17.2.2.1 California Department of Transportation

Caltrans has jurisdiction over state highways and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on highways. Colusa County is under the jurisdiction of Caltrans District 3. The following Caltrans regulations apply to potential transportation and traffic impacts of the Project:

California Vehicle Code, Division 15, Chapters 1 through 5 (Size, Weight, and Load). Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.

California Street and Highway Code, Sections 660-711, 670-695. Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery, includes regulations for the care and protection of state and county highways and provisions for the issuance of written permits, and requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.

4.17.2.2.2 Senate Bill 743

Senate Bill 743, which was codified in PRC Section 21099, required changes to the guidelines implementing CEQA (CEQA Guidelines) (CCR, Title 14, Div. 6, Ch. 3, § 15000 *et seq.*) regarding the analysis of transportation impacts. Pursuant to PRC Section 21099(b)(1), the criteria for determining the significance of transportation impacts must "promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses." (See adopted CEQA Guidelines Section 15064.3(b), Criteria for Analyzing Transportation Impacts). To that end, in developing the criteria, the Governor's Office of Planning and Research (OPR) has proposed, and the California Natural Resources Agency has certified and adopted, changes to the CEQA Guidelines that identify VMT as the most appropriate metric to evaluate a project's transportation impacts. With the California Natural Resources Agency's certification and adoption of the changes to the CEQA Guidelines, automobile delay, as measured by "level of service" and other similar metrics, no longer constitutes (in most cases) a significant environmental effect under CEQA. (PRC Section 21099(b)(3))

4.17.2.2.3 California Environmental Quality Act Guidelines Section 15064.3, subdivision (b)

CEQA Guidelines Section 15064.3(b) describes specific considerations for evaluating a project's transportation impacts. Generally, VMT is the most appropriate measure of transportation impacts. VMT refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact.

4.17.2.3 Local

4.17.2.3.1 Colusa County General Plan Circulation Element

This element of the General Plan sets out goals, policies, and programs related to transportation and circulation. The following transportation-related policies are applicable to the Project:

> **Policy CIRC 1-4:** Define level of service (LOS) consistent with the latest edition of the Highway Capacity Manual and calculate using the methodologies contained in that manual. At minimum, weekday AM and PM peak hour traffic volumes will be used in determining compliance with the level of service standard. The analysis of other periods may be appropriate and will depend on type of use.
>
> **Policy CIRC 1-5: Maintain** LOS C or better for County roadways and intersections in the unincorporated County.
>
> **Policy CIRC 1-11:** Require new development to: 1) finance and construct all off-site circulation improvement (including safety improvements) necessary to mitigation a project's transportation impacts to local roads, consistent with the policies of the General Plan: and 2) to analyze traffic impacts on the regional transportation system and require fair-share contribution necessary to mitigate significant impacts to regional transportation improvements where a financing plan or other mechanism has been adopted to ensure the full funding and construction of improvements. Right-of-way dedication should be requested as a condition of proposed new or widened major or minor collector.
>
> **Policy CIRC 3-4:** Install stop signs, railroad crossing guards, and warning signs where appropriate and warranted.
>
> **Policy CIRC 4-1:** Ensure that transportation control measures, alternative transportation options, and congestion management strategies are applied to long-term planning activities and large-scale new development projects.

4.17.3 Thresholds of Significance

A Project would result in significant impacts to transportation if it would:

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 uses (e.g., farm equipment); or

d) Result in inadequate emergency access.

4.17.4 Impacts Analysis

4.17.4.1 Methodology

4.17.4.1.1 Trip Generation

Trip generation for Project construction is shown below in Table 4.17-1. Detailed trip generation for the Project was developed based on the construction schedule and the Applicant's experience with construction and operation of solar facilities similar to the Project. For the purposes of CEQA,

the values shown in the table provide a conservative scenario in that they represent the peak of Project construction activities that would occur for approximately 2–3 months, however traffic volume will be somewhat near the peak for 7 months. Though the Applicant will seek to hire local workers to the maximum extent feasible, due to the size of the Project, it is anticipated that up to 50 percent of the construction workers would commute from the surrounding Sacramento Valley area. Given the distance from Sacramento to the Project site it is anticipated that up to 25 percent of the construction workers would carpool. An estimated 25 percent of workers carpooling was used for the analysis and is reflected in the values shown in the table. The trip generation assumes a passenger car equivalent of 3.0 for the large trucks associated with construction activities. Passenger car equivalent account for differences between trucks and passenger vehicles (i.e., trucks utilize more roadway capacity than passenger vehicles due to their larger size, slower start-up times, and reduced maneuverability).

Table 4.17-1. Trip Generation for Project Construction

Phase	Daily		Trip Generation			
			AM Peak Hour		PM Peak Hour	
	Workers	Trucks	in	out	in	out
Peak Construction Traffic	200	15	150	8	8	150
Operations	1-2*	2*	1*	1*	1*	1*

Peak hours for traffic generated by the Project are expected to be between 6:00 a.m. and 7:00 a.m. and between 6:00 p.m. and 7:00 p.m., when construction workers would commute to and from the Project site. It is expected that nearly all workers would arrive and leave during the peak hours. Conservatively, a small number of workers are included as either leaving during the morning peak hour or arriving during the evening peak hour.

Once constructed, the Project would operate 7 days per week and 365 days per year. Only occasional, on-site maintenance is expected to be needed following commissioning. Initially, personnel would likely visit the Project site daily or weekly, but it is anticipated that eventually maintenance visits would be reduced to once a month or less, such that facility operations would generate little traffic. Operation and maintenance activities would require up to three workers performing visual inspections, monitoring plant performance, executing minor repairs, and responding to needs for plant adjustment. On intermittent occasions, the presence of 5 to 30 workers may be required for repairs or replacement of equipment, panel cleaning, and other specialized maintenance. Due to the infrequent operations and maintenance worker trips to the site, there would be no impact to peak hour traffic associated with ongoing operations of the Project.

Trip generation for decommissioning is conservatively assumed to be similar to Project construction.

4.17.4.1.2 Trip Distribution

The Project traffic distribution was estimated based on panel and racking manufacturer shipping, proximity to cities, commonality of the remaining materials like fencing and concrete. Based on these considerations, it is expected that the panels, inverters, and racking would arrive by ship to the Port of Oakland and or San Francisco, a maximum of 121 miles from the Project location.

These components would be delivered with standard 5-axle semi-trucks by way of I-680 to I-80, to I-550 to I-5 to the Project site and would be approximately 40 percent of the total materials and equipment truck loads to the Project site. The remaining 60 percent of heavy vehicle loads were assumed to come from Sacramento; either being sourced locally or arriving at a local railyard. This includes construction equipment, aggregate, concrete, fencing, cabling, and electrical equipment. An estimated 50 percent of the workers were assumed to either reside or lodge in Sacramento. Due to limited lodging available in Williams and Colusa, only approximately 10 to 15 percent of the workers were assumed to reside or lodge in those cities, respectively.

In summary, the following construction trip distribution percentages were assumed:

- 40 percent of trucks traveling to/from the north via interstates;
- 60 percent of trucks/50 percent of construction workers traveling to/from the southeast (Sacramento) via I-5 and SR 20; and
- 25 percent of construction workers traveling to/from Colusa and Williams via SR 20.

4.17.4.1.3 Vehicle Miles Traveled

CEQA Guidelines Section 15064.3(b) was adopted in December 2018 by the California Natural Resources Agency. These revisions to the CEQA Guidelines criteria focus the analysis of traffic impacts from driver delay to reduction of GHG emissions, creation of multimodal networks, and diversity of land uses. The revisions required lead agencies to evaluate transportation impacts based on VMT beginning July 1, 2020. VMT is a measure of the total number of miles driven to or from a project and is sometimes expressed as an average per trip or per person. Colusa County has not yet adopted VMT-based transportation significance thresholds. Where no VMT threshold has yet been adopted, the Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018) provides guidance:

> *"The VMT metric can support the three statutory goals: "the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." (Pub. Resources Code, § 21099, subd. (b)(1), emphasis added.) However, in order for it to promote and support all three, lead agencies should select a significance threshold that aligns with state law on all three. State law concerning the development of multimodal transportation networks and diversity of land uses requires planning for and prioritizing increases in complete streets and infill development but does not mandate a particular depth of implementation that could translate into a particular threshold of significance. Meanwhile, the State has clear quantitative targets for GHG emissions reduction set forth in law and based on scientific consensus, and the depth of VMT reduction needed to achieve those targets has been quantified. Tying VMT thresholds to GHG reduction also supports the two other statutory goals. Therefore, to ensure adequate analysis of transportation impacts, OPR recommends using quantitative VMT thresholds linked to GHG reduction targets when methods exist to do so."*

IMPACT 4.17-1: *Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?* **(Less than significant Impact)**

The LOS analysis performed for the Traffic Analysis Memorandum provided in Appendix J relies on the conservative estimates due to the lack of traffic count data. Given the remoteness of the Project site, the local roads are believed to have far fewer vehicles than their capacity. Applying the conservative estimate of 800 vehicles per day under current conditions, during the peak hour there would be 80 or fewer vehicles on the road using the Highway Capacity Manual standard estimation method of peak hour being 10 percent. The Highway Capacity Manual capacity for a single free flow lane is 1,800 vehicles per hour (TRB 2016). These intersections are two-way stop-controlled intersections, so they have one free-flowing lane in each direction. The estimated total number of vehicles during the peak hours, taking into account 80 vehicles per hour at Walnut Drive and at East Camp Road currently, plus 150 vehicles generated by Project construction, would be 230 to 310. The actual capacity of the intersection is far less than the sum of the two lanes since there would be a break in the traffic for stopped vehicles; however, the estimated 230 to 310 vehicles during the peak hour is far below the capacity of the infrastructure, and the roadways surrounding the Project site would still function desirably during Project construction. The LOS calculation for Walnut Drive and Spring Valley Road is provided as Appendix A and yields a LOS A during peak construction. Based on this conservative estimate, it can be reasonably concluded that the LOS will be C or better during construction.

Because the existing roadways would still be functioning under their estimated capacity, there will be no need to mitigate for traffic and a Traffic Management Plan is not anticipated to be needed for this Project.

During the construction phase, service roads would be constructed in between the solar arrays and around the Project site. Signage indicating the speed limit and stop signs would be posted where appropriate. Due to the remoteness of the Project site, it is not expected to interfere with any bicycle or pedestrian facilities.

The proposed Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Therefore, the Project impact would be less than significant.

Mitigation: None required.

IMPACT 4.17-2: *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?* **(Less than Significant Impact)**

The VMT analysis quantifies the total number of vehicle miles added to the roads as a direct result of the construction and operation of the Project. The transportation impact study's VMT analysis includes the estimated number of workers on a weekly basis, reduced by the number that are likely to carpool, and multiplied by the approximate distance traveled and the number of times per week that distance is traversed (i.e., commutes happen 10 times per week = 2 times per day). As shown in Table 4.17-2, a total VMT of 721,453 was calculated for the Project, which is relatively low compared to similarly sized projects within California. Vehicle trips would peak during the months of February and May.

Mitigation: None required.

Table 4.17-2. Construction Vehicle Miles Traveled

Type	Worker Trip	Worker Trip	Worker Trip	Worker Trip	Equipment Trip	Materials Trip	Materials Trip
Source Location	Williams	Colusa	Yuba City	Sacramento	Sacramento	Port of SF	Sacramento
Distance	9.3	18.4	42.2	64.4	64.4	118	64.4
Times per week	10	10	10	10	2	2	2
Percent of total	15%	10%	10%	65%	100%	60%	40%
Percent Carpool	25%	25%	25%	25%	N/A	N/A	N/A
October	697.5	920	2110	20930	644	708	257.6
November	697.5	920	2110	20930	644	708	257.6
December	1395	1840	4220	41860	128.8	1416	515.2
January	2790	3680	8440	83720	128.8	1416	515.2
February	2790	3680	8440	83720	128.8	2124	772.8
March	2790	3680	8440	83720	128.8	2124	772.8
April	2790	3680	8440	83720	128.8	2124	772.8
May	2790	3680	8440	83720	128.8	2124	772.8
June	2790	3680	8440	83720	128.8	708	257.6
July	279	368	844	8372	644	0	0
Total:	721,453						

Source: Tetra Tech 2021

IMPACT 4.17-3: *Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?* **(Less than Significant Impact)**

Some of the heavy construction equipment and facility materials may be transported to the site by oversize vehicles. The use of oversize vehicles during construction can create a hazard to the public by limiting motorist views on roadways and by the obstruction of space.

Oversize vehicle loads must comply with permit-related and other requirements of the California Vehicle Code and California Streets and Highway Code. California Highway Patrol and Colusa County may require oversize load permits which would specify if California Highway Patrol escorts are required during oversize vehicle trips. Due to the rural nature of the area roads and relatively low traffic volumes, construction vehicles are not anticipated to cause hazards to other roadway users traveling to and from the Project site. Furthermore, the Project would not include a design feature or utilize vehicles with incompatible uses that would create a hazard on the roadways surrounding the Project site.

Access to the Project site would be provided from SR 20, Walnut Drive and Spring Valley Road. Design and construction of Project access road intersections would be required to conform with Colusa County standards, ensuring that corner sight distance requirements are followed (though the relatively flat terrain is assumed to not make sight distance an issue of concern). These design and construction requirements would ensure that Project elements would not increase

transportation-related hazards. Impacts associated with transportation-related hazards resulting from a Project geometric design feature or incompatible uses would be less than significant.

Mitigation: None required.

IMPACT 4.17-4: *Would the project result in inadequate emergency access?* **(Less than Significant Impact)**

The Project site is located in a rural area with existing roads providing adequate egress/ingress to proposed Project site in the event of an emergency. Additionally, as part of the Project, internal access roadway improvements would occur. Therefore, the Project would allow for adequate emergency access. The Project also would be subject to the requirements of the current Fire Code and Building Code, and Project plans would be reviewed by Colusa County for appropriate access design prior to the issuance of building permits.

Project-related operational traffic would not result in any noticeable change to operating conditions on study area roadways, and the Project would not require closures of public roads, which could inhibit access by emergency vehicles. During construction of the Project, heavy construction-related vehicles could interfere with emergency response to the site or emergency evacuation procedures in the event of an emergency (e.g., slowing vehicles traveling behind the truck). In the vicinity of the Project site, there are sparse rural residences, and a lack of businesses and emergency response stations. Heavy equipment and construction materials deliveries are anticipated to occur throughout the day, such that they would not cause prolonged delays on surrounding roadways, such that construction-related traffic would not result in inadequate emergency access.

Mitigation: None required.

4.17.5 PG&E Cortina Substation Improvement

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission line that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements made would be within the existing Cortina Substation footprint. These improvements would not put a significant strain to the existing roadways. Additionally, there would be no need to finance or physically make improvements to roadways as mitigation for the PG&E improvements. Furthermore, the PG&E Cortina substation improvements would have no significant impact on criteria 4.17-1 to 4.17-4. No mitigation would be required.

4.17.6 Cumulative Impacts

As discussed above, the Project would cause no impact with respect to conflicts with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Therefore, the Project could neither cause nor contribute to any potential significant cumulative effect regarding these considerations.

The potential for cumulative transportation impacts exists where there are multiple projects proposed in an area that have overlapping construction schedules and/or project operations that could result in a substantial contribution to increased traffic levels throughout the surrounding roadway network.

For the purposes of the cumulative analysis of transportation impacts, only other projects that contribute, or could contribute, traffic to the same roadway segments as the Project should be included. Because the volume of traffic generated would not be particularly high during site clearing and construction and decommissioning and would be substantially less during operation and maintenance activities, only segments of Walnut Drive and Spring Valley Road would experience increases in traffic. Therefore, the geographic scope for cumulative impacts consists of those two roadway segments.

Similar to the Project analysis above, which focused on the construction phase of the Project, the temporal scope for cumulative transportation impacts is limited to the construction and decommissioning phases, because activities during these times would contribute the most traffic to roadways within the geographic scope.

Past, present, and reasonably foreseeable future actions making up the cumulative scenario are identified in Table 2-1. Past projects have been constructed and so would contribute only ongoing operational traffic to area roadways during the Project's construction phase. The ongoing impacts associated with past projects are accounted for as part of baseline conditions for the Project and are described as part of the existing conditions described above. That evaluation indicates that vehicular circulation would continue to operate acceptably under Project conditions.

There are no cumulative projects that could potentially interact with the Project and contribute traffic to the roadway segments defined above in the geographic scope of the cumulative transportation analysis. The construction traffic associated with the Project would not increase VMT or daily trips beyond the roadways current operating capacity, such that the Project's incremental contribution to cumulative transportation impact would not be cumulatively considerable.

Operational traffic associated with the Project would not substantially increase daily trips on any roadway segment. The Project would not cause or contribute to a significant adverse cumulative impact relating to operational traffic.

4.17.7 References

California Department of Transportation (Caltrans). 2019. 2019 Traffic Volumes on California Highways. Available online at: https://dot.ca.gov/programs/traffic-operations/census. Accessed May 2021.

Office of Planning and Research (OPR). 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. Available online at: https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. Accessed April 2021.

Tetra Tech, Inc. (Tetra Tech). 2021. Traffic Analysis Technical Memorandum.

Transportation Research Board (TRB). 2016. Highway Capacity Manual. 6th Ed. Washington, D.C.

4.18 TRIBAL CULTURAL RESOURCES

This section identifies and evaluates issues related to tribal cultural resources in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received scoping comments relating to Tribal Cultural Resources from the NAHC, and those comments have been incorporated into the Draft EIR.

4.18.1 Existing Conditions

The Project area and surrounding region is within the ancestral territory of the Patwin band of the Southern Wintun people (see discussion in Section 4.5.1.2). An ethnographic review of tribal cultural resources was performed via the NWIC record search, NAHC SLF search, and review of available ethnographic documents (see Section 4.5.1). In addition, AB 52 tribal notification consultation letters were sent out to tribes.

4.18.2 Regulatory Setting

A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource, may have a significant effect on the environment (PRC 21084.2). As specified in the PRC Section 21080.31, as amended by AB 52, requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. Consultations must include discussing the type of environmental review necessary, the significance of tribal cultural resources, the significance of the project's impacts on the tribal cultural resources, and alternatives and mitigation measures recommended by the tribe (PRC 21080.3.1 (a) and 20184.3(b)(a)), and Government Code 65352.4). That consultation must take place prior to the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project.

Public Resource Code Section 21074 defines tribal resources as follows:

(a)"Tribal cultural resources" are either of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

14 California Code of Regulation 15120(d) Confidentiality

Section 15120(d) of the California Code of Regulations states that information and locational information regarding archaeological sites, sacred lands, or other information is confidential and is restricted from disclosure in public documents.

Also see California Health and Safety Code, Section 7052 and 7050.5 and California Public Resource Code, Section 5097 discussed in Section 6.5.2.

4.18.3 Threshold of Significance

In recognition of AB 52, which strengthens the level of review required for Tribal cultural resources and establishes guidelines for require consultation with Native American Tribes, the following threshold is included:

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

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

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

4.18.4 Impact Analysis

Impact 4.18-1: *Would the project cause adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geologically defined in terms of the size and scope of the landscape, sacred plan, or object with cultural value to a California Native American tribe that is:*

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

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

Less than Significant Impact with Mitigation. The combined NWIC record search, NAHC SLF search, and Phase I field survey (see Section 4.5), and tribal notification did not identify any tribal cultural resources listed in a local register or eligible or listed as eligible to the CRHR within the Project Area. Per Assembly Bill 52 (21080.3.1), the County sent Project consultation letters to the following tribal governments on July 10, 2020:

- Daniel Gomez, Chairman, The Colusa Indian Community Council
- Charlie Wright, Chairperson, Cortina Rancheria – Kletsel Dehe Band of Wintun Indians
- Anthony Roberts, Chairperson, Yocha Dehe Wintun Nation
- Glenda Nelson, Chairperson, Estom Yumeka Maidu Tribe – Enterprise Rancheria
- Ronald Kirk, Chairperson, Grindstone Rancheria of Wintun-Wailaki
- Andrew Alejandre, Chairperson, Paskenta Band of Nomlaki Indians
- Jose Simon III, Chairperson, Middletown Rancheria of Pomo Indians

Responses were received by the following:

Leland Kinter, Tribal Historic Preservation Officer, of the Yocha Dehe Wintun Nation replied on July 23, 2020 that the Project is within the aboriginal territories of the Yocha Dehe Wintun Nation and the tribe has an interest and authority in the Project Area. Mr. Kinter also stated the tribe has concerns that the Project could impact cultural resources and recommends cultural sensitivity training for Project personnel prior to the start of Project construction and on-site cultural monitors during development and ground disturbance.

Implementation of **Mitigation Measures CUL-1** (Cultural Resource Worker Education/Training), **CUL-2** (Inadvertent Discovery of Archaeological Resources During Construction), and **CUL-3** (Native American Tribal Consultation and Monitoring), would ensure that tribal resources would be appropriately addressed, therefore, reducing any significant impacts. Thus, the Project is proposed to have less than significant impacts after mitigation.

4.18.5 Mitigation Measures

CUL-1, **CUL-2**, and **CUL-3** would be implemented, as described in Section 4.5 Cultural Resources.

4.18.6 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission line that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's property at the Cortina Substation to the available PG&E Cortina substation bay. The improvements would include the installation of a grounding system,

disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements made would be within the existing Cortina Substation footprint.

Through the implementation of **Mitigation Measures CUL-1, CUL-2**, and **CUL-3** these improvements would not have a substantial adverse effect on any tribal cultural resources, and no additional mitigation measures would be required.

4.18.7 Cumulative Impacts

If construction ground disturbance depths extend to native soils (approximately 1.5 to 3 feet or more in depth), there would be a potential to impact previously unrecorded subsurface cultural resources or human remains. As discussed in Section 4.5, Mitigation Measures **CUL-1 through CUL-3** would mitigate impacts to cultural resources to be less than significant, and compliance with existing regulations would ensure that any impacts to human remains would be less than significant. In addition, cultural resources that are potentially affected by related or future projects would be subject to the same requirements of CEQA and the laws and regulations discussed above in section 4.5.2 Regulatory Setting. Therefore, the Project would contribute to a less than significant cumulative impact to tribal cultural resources.

4.19 UTILITIES AND SERVICE SYSTEMS

This section identifies and evaluates issues related to Utilities and Service Systems in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received no scoping comments relating to Utilities and Service Systems.

This analysis is based in part on the Water Supply Assessment report prepared for the Project by Tetra Tech in July 2021 (Appendix H). The County independently reviewed this (and other materials prepared by or on behalf of the Applicant) and determined it to be suitable for reliance, in combination with other materials included in the formal record, in the preparation of this Draft EIR.

4.19.1 Existing Conditions

For the purposes of this analysis, the relevant utility or service systems are the water supply, wastewater, stormwater, solid waste disposal, gas and electrical, and telecommunication utilities that would provide service to the Project site.

4.19.1.1 Water Supply

The Project is located in the Colusa Subbasin, included in the larger Sacramento Valley Groundwater Basin. The Colusa Subbasin covers approximately 1,131 square miles and is bounded by Stony Creek to the north, the Coast Ranges to the west, the Sacramento River to the east, and the Yolo Subbasin to the south.

4.19.1.2 Solid Waste Management

The Solid Waste Division of the Colusa County Public Works Department is responsible for County solid waste coordination and solid waste disposal activities. Garbage collection for the unincorporated areas of the County is contracted by Recology. The Maxwell Transfer Station, located approximately 19 miles northeast of the Project site, is owned and operated by Recology (Colusa County 2021). Solid waste from the Maxwell Transfer Station is transferred to the Recology Ostrom Road Landfill in Yuba County. The Ostrom Road Landfill is permitted to receive 3,000 tons of waste per day; it has a remaining capacity of approximately 41,822,300 cubic yards and is expected to reach its permitted capacity in 2066 (CalRecycle 2021).

4.19.1.3 Wastewater

Wastewater service is not currently provided at the Project site. Within Colusa County, rural areas generally use on-site septic systems for wastewater disposal.

4.19.1.4 Stormwater

No stormwater drainage infrastructure is located on-site; rather, natural drainage patterns and ditches control water on the site.

4.19.1.5 Gas and Electrical

PG&E is an investor-owned utility company that provides electricity and natural gas supplies and services throughout a 70,000 square-mile service area that includes Colusa County and the Project site (PG&E 2020).

4.19.2 Regulatory Setting

4.19.2.1 Federal

No federal regulations pertaining to Utilities and Service Systems apply to the Project.

4.19.2.2 State

4.19.2.2.1 The California Integrated Waste Management Act

The California Integrated Waste Management Act was enacted in 1989 as AB 939 and codified in Pub. Res. Code §40050 et seq. The Act required all California cities, unincorporated portions of counties, and approved regional solid waste management agencies to divert a minimum of 25 percent of solid waste from landfills by 1995 and 50 percent by 2000. Cities and counties are required to maintain the 50 percent diversion specified by AB 939 past 2000. Diversion includes waste prevention, reuse, and recycling. The Act resulted in the creation of the California Integrated Waste Management Board, which now is known as CalRecycle. Under the Act, jurisdictions also have to submit solid waste planning documentation to CalRecycle. The Act also set into place a comprehensive statewide system of permitting, inspections, and maintenance for solid waste facilities, and authorized local jurisdictions to impose fees based on the types and amounts of waste generated.

4.19.2.2.2 Sustainable Groundwater Management Act

In 2014, a three-bill legislative package was signed into law by Governor Brown. The three-bill package comprised of AB 1739, SB 1168, and SB 1319, known as the Sustainable Groundwater Management Act. The Act requires governments and water agencies of high and medium priority basins to manage over drafting in order to bring groundwater basins to balanced levels of pumping and recharge. The Sustainable Groundwater Management Act empowers local agencies to form Groundwater Sustainability Agencies to manage basins and adopt Groundwater Sustainability Plans for crucial groundwater basins in California.

4.19.2.2.3 22 California Code of Regulations Division 4.5

Title 22 of the California Code of Regulations discusses an array of requirements with respect to the disposal and recycling of hazardous and universal wastes. Specific standards and requirements are included for the identification, collection, transportation, disposal, and recycling of hazardous wastes. Additional standards are included for the collection, transportation, disposal, and recycling of universal wastes, where universal wastes are defined as those wastes identified in Section 66273.9 of Title 22 of the California Code of Regulations, including batteries, electronic devices, mercury containing equipment, lamps, cathode ray tubes, and aerosol cans. Requirements include recycling, recovery, returning spent items to the manufacturer, or disposal at an appropriately permitted facility. Division 4.5 of Title 22 also provides restrictions and standards relevant to waste destination facilities and provides authorization requirements for various waste handlers. Title 22 includes California's Universal Waste Rule, as well as other additional waste handling and disposal requirements.

4.19.2.2.4 Utility Notification Requirements

California Government Code Section 4216 et seq. requires owners and operators of underground utilities to become members of, participate in, and share the costs of a regional notification center.

4.19.2.2.5 California Public Utilities Commission

The California Public Utilities Commission regulates services and utilities and assures California's access to safe and reliable utility infrastructure and services. The essential services regulated include, electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies. The California Public Utilities Commission implements the California Environmental Quality Act for utility construction by PG&E and the other public utilities under its jurisdiction, and regulates the location and relocation of power lines by investor-owned utilities, such as PG&E.

4.19.2.2.6 National Pollutant Discharge Elimination System Construction General Permit

Construction activities disturbing 1 acre or more of land, as proposed for the Project site, are subject to the permitting requirements of the National Pollutant Discharge Elimination System General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (Construction General Permit) and must apply for Construction General Permit coverage. For all new projects, applicants must electronically file permit registration documents using the Stormwater Multiple Applications and Report Tracking Systems, and must include a Notice of Intent, risk assessment, site map, and SWPPP to be covered by the General Construction Permit prior to beginning construction. The risk assessment and SWPPP must be prepared by a State-Qualified SWPPP Developer. See Section 4.10, *Hydrology/Water Quality*, for a more detailed discussion relative to water quality and SWPPP requirements.

4.19.2.3 Local

4.19.2.3.1 Colusa County General Plan

The Colusa County General Plan Public Facilities and Services Element (2012) contains the following policies related to Utilities and Service Systems that are relevant to the Project (Colusa County 2012):

> ***Policy PSF 1-8:*** Require proof of an adequate (as defined by the County of Environmental Health Division) potable water supply to serve the entire project prior to approval of any division of land or use permit.
>
> ***Policy PSF 1-22:*** For projects that will rely on on-site wastewater system, applicants shall provide detailed plans demonstrating that the system will be adequate to serve the project and will meet or exceed all applicable water quality standards.
>
> ***Policy PSF 1-27:*** Ensure future septic systems are designed and located to protect waterways and agricultural lands.
>
> ***Policy PSF 2-6:*** Encourage the salvage, re-use and/or recycling of demolition and construction material on all construction sites and encourage the re-use of salvage material in project construction.
>
> ***Policy SA 1-27:*** Maintain adequate lands that can be used for groundwater recharge and storm water management. These lands may include parcels designated Agriculture General (AG), Designated Floodway (DF), and Resource Conservation (RC)

4.19.3 Significance Criteria

A project would result in significant impacts to utilities and service systems if it would:

a) *Require or result in the relocations or construction of new or expanded water, wastewater, treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation which would cause significant environmental effects;*

b) *Have insufficient 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 inadequate 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; or*

e) *Not comply with federal, State, and local management and reduction statutes and regulations related to solid waste.*

4.19.4 Impact Analysis

IMPACT 4.19-1: *Would the project require or result in the relocations or construction of new or expanded water, wastewater, treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation which would cause significant environmental effects? (**Less than Significant Impact**)*

Water Supply

Current water facilities on-site are one hand dug well and several manmade reservoirs currently used to water the land for cattle grazing.

The city of Williams is the purveyor of a public water system located approximately 11.4 miles from the Project site. The City has indicated that it can provide water for the Project through a fire hydrant located at 180 N. Virginia Way in the city of Williams. Water obtained from the fire hydrant would be trucked to the Project site.

The City's potable water system consists of 2,126 service connections and serves a population of 5,698. The City depends on the Colusa Sub-basin for water supply and utilizes three active and two standby groundwater wells (which pump from the Colusa Sub-basin). The wells are approximately 120 to 500 feet deep.

The Project would primarily require water during construction for dust control. Total water volume to be used during construction is 46 acre-feet (AF; 15,000,000 gallons). During O&M, water would be used for panel washing and maintenance. The expected annual water consumption during operation would be approximately 1 AF per year. No new wells would be constructed as part of the Project. The proposed Project would not require or result in the relocation or construction of new or expanded water treatment facilities.

Wastewater

The proposed Project would not require permanent wastewater treatment connection due to the small number of employees during operation. Portable toilets would be on-site for permanent employees. Portable units would be provided for workers during construction. Removal of the portable units would not affect the operation or function of wastewater facilities that are located on or adjacent to the Project. Therefore, the Project would not require or result in relocations or construction of wastewater facilities.

Stormwater

No on-site stormwater detention facilities are planned nor would the Project require the construction or relocation of stormwater drainage facilities. The Project has been designed so that site drainage would continue to follow the natural drainage pattern. None of the Project facilities would prevent stormwater flow. Site preparation and construction activities would be performed in accordance with a SWPPP, or similar plan as appropriate, which incorporates stormwater BMPs to reduce the adverse effects of erosion and sedimentation. Therefore, the Project would not require or result in the construction or relocation of new or expanded stormwater facilities that would cause an adverse environmental effect.

Electric Power

The Project is a solar facility that would include arrays of solar PV modules (or panels) and support structures, direct current electricity to alternating current electricity power inverters and transformers or power conditioning stations, an on-site substation, and a gen-tie line to generate and distribute up to 80 MW of electricity. Additionally, the energy storage system would include power conditioning systems, electrical wiring, switching, transformers, and connect to the 60.0 kV bus in the Project substation.

Except for the potential use of temporary portable lighting, no electrical services are required during construction and decommissioning. Electricity would be consumed by the Project, as required for operation, when the Project is not powered by on-site energy generation.

Electric facilities and connections proposed as part of the Project could result in potential environmental impacts that are discussed throughout this Draft EIR. The Project would not require or result in the construction or relocation of new or expanded electric facilities beyond those included as part of the Project that would cause an adverse environmental effect.

Natural Gas

As a solar PV facility, the Project does not require the use of natural gas for the power generation process. Therefore, no natural gas facilities are proposed as part of the Project, nor would the Project result in the relocation or construction of new or expanded natural gas facilities that would cause an adverse environmental effect.

Telecommunications Facilities

The Project proposes new telecommunications infrastructure to connect to existing local telecommunication services. As discussed in *Chapter 2, Project Description*, a telecommunication line would be comprised of fiber optic cable and/or 25-pair telephone line, which would be installed above and below ground, either attached to existing distribution lines or installed immediately

adjacent to the Project substation. The telecommunication routes would use a combination of existing poles or new poles and below ground installations. The point of interconnection to the existing telecommunication facilities would be in a small telephone/fiber optic vault. Interconnection to the Project would be within the Project substation. Below ground installations are usually installed 24-48 inches below grade. Above ground lines are typically placed 6 feet below existing distribution lines or on new, adjacent wooden poles. Telecommunications may also be transmitted by a small wireless microwave antenna mounted on a pole up to 90 feet tall, which would be placed at the Project substation. The impacts of the telecommunications-related components of the Project are analyzed on a resource-by-resource basis throughout Chapter 4 of this Draft EIR. The construction required to expand telecommunications services for Project purposes would cause a less-than-significant environmental effect.

Mitigation: None required.

IMPACT 4.19-2: *Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?* **(Less than Significant Impact)**

As discussed in **IMPACT 4.10-2**, the solar PV facility would require a minimal amount of water during construction and operation. Water would be used for dust control and soil compaction during construction. Construction would require 46 AF of potable water over an 11-month period. Water usage for maintenance of the Project would be 1 AF and be used for panel washing. Rainfall is predicted to provide occasional cleaning for the panels. Panel washing is only required if the performance of the panels degrades significantly between rainfall events. Water would be trucked in from a fire hydrant located in the city of Williams during construction and maintenance of the Project.

Existing water consumption at the Project site would be reduced by approximately 554 AF during construction. During operation, existing water consumption would be reduced even further as operational use of water would be significantly less than construction water consumption. Water consumption during the operational life would be reduced by 592 AF per year.

Due to the low amount of water used during the construction and operation of the life of the Project, it is anticipated that the Project would have sufficient water supplies during normal, dry, and multiple dry years.

Mitigation: None required.

IMPACT 4.19-3: *Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that is has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?* ***(No Impact)***

Wastewater disposal needs at the proposed Project addition during construction would be provided on-site via portable toilet facilities with sanitary disposal occurring at an offsite facility. During operation, the O&M building would be served by a portable toilet. Public wastewater treatment services would not be required for the modified Project and no increase in demand for wastewater treatment services would occur with implementation of the Project. Therefore, the Project would not result in a determination by the wastewater treatment provider that serves the

Project has inadequate capacity to serve the Project's demand in addition to the provider's existing commitments.

Mitigation: None required.

IMPACT 4.19-4: *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? (**Less than Significant Impact**)*

Approximately 20 cubic yards of solid waste per week would be generated during the short-term construction phase (11 months), a majority of which would be non-hazardous, and consist primarily of cardboard, wood pallets, copper wire, scrap metal, common trash, and wood wire spools. Construction waste materials such as metal and wood would be separated from the waste stream and recycled whenever feasible. Non-recyclable construction waste would be placed into commercial trash dumpsters located on-site. Dumpsters would be collected as needed by a commercial service and delivered to a landfill, such as the Maxwell Transfer Station.

As described in Section 4.18.1.2, the solid waste from the Maxwell Transfer Station is transferred to the Recology Ostrom Road Landfill in Yuba County. The Ostrom Road Landfill is permitted to receive 3,000 tons of waste per day; it has a remaining capacity of approximately 41,822,300 cubic yards and is expected to reach its permitted capacity in 2066 (CalRecycle 2021). Additionally, it is assumed the Project would comply with the CalGreen Code, which is intended to assist the County in compliance with the solid waste reduction goals of AB 939.

Generation of solid waste during the construction phase would be properly disposed of in accordance with applicable statutes and regulations. Similarly, any waste generated during future decommissioning of the modified Project would be required to be properly managed and disposed of in a licensed, offsite land fill or recycling facility. It is conservatively assumed that solid waste for decommissioning would be approximately the same as solid waste generated during construction.

During the operations phase, minimal amounts of solid waste would be generated by staff during periodic maintenance activities, and this solid waste would be collected on a daily basis or as otherwise needed and transported to a licensed offsite landfill or recycling facility for disposal. The modified Project would be implemented in compliance with applicable federal, state, and local statutes and regulations related to solid waste.

Mitigation: None required.

IMPACT 4.19-5: *Would the project comply with federal, State, and local management and reduction statutes and regulations related to solid waste? **(No Impact)***

During initial demolition and construction, the Project would be required to comply with the CalGreen Code, which is intended to assist the County in compliance with the solid waste reduction goals of AB 939. Project operation would generate a negligible amount of solid waste as well as an on-site dumpster that would be collected weekly by a commercial waste management service. Therefore, the Project would not negatively impact the provision of solid waste services or the attainment of solid waste reduction goals and no impact would occur.

Mitigation: None required.

4.19.5 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's gen-tie line terminated at the boundary of PG&E's Cortina Substation to the available PG&E Cortina Substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. These improvements would not alter the current and future water usage of the Project. The utilities discussed in **IMPACT 4.19-1** would not be affected due to the PG&E improvements. Nor would solid waste management exceed any capacity of the local waste facilities or the standards set by local and state agencies as a result of these impacts. Thus, the improvements would have no impact on local utilities. No mitigation is required.

4.19.6 Cumulative Impacts

The potential cumulative impacts related to Utilities and Service Systems would extend within the service areas of the utility and service providers that would serve the Project site. As discussed above, there would be no impact with respect to construction or expansion of water, wastewater, stormwater, telecommunications, or natural gas facilities, or compliance with federal, state, a local management and reduction statutes related to solid waste, such that there is no significant cumulative impact to these criteria to which the Project could contribute.

The cumulative analysis provided below considers the incremental impacts related to water availability and landfill capacity, that could be caused by the Project in combination with other past, resent, and reasonably foreseeable future projects.

The geographic scope of potential cumulative impacts to landfill capacity would be the areas served by the Recology Ostrom Road Landfill in Yuba County. The Project would generate solid waste (causing less than significant impacts) of approximately 20 cubic yards per week during short-term construction and decommissioning, and one cubic yard per week during O&M, recycling whenever feasible. In the unlikely scenario that the cumulative projects resulted in a significant cumulative effect, the Project's incremental contribution would not be cumulatively considerable due to the negligible amount of waste that would be generated during the Project's construction period. During O&M, the cumulative volume of solid waste disposal would be substantially lower compared with construction.

The Ostrom Road Landfill is expected to reach its permitted capacity in 2066, such that it would be expected to be operating during decommissioning of the Project, which is estimated to be 35 years after the start of operations, or approximately in 2058. Should the Ostrom Road Landfill not be available to the Project for decommissioning, the Project and the County would still be required to comply with the Integrated Waste Management Act. Colusa County is required to specify areas for transformation or disposal sites to provide capacity for non-recyclable solid waste generated in the jurisdiction for a 15-year planning horizon. If existing areas are not available to meet the anticipated 15-year capacity requirement, the County would be required to create and implement a plan to site additional capacity. It is anticipated that the County therefore would have at least 15 years of remaining capacity at the time of decommissioning, in compliance with this Act, and

that decommissioning waste could be disposed of within the limits of available permitted capacity. The same state and local requirements for waste diversion and recycling that would apply to the Project also would apply to other projects in the cumulative scenario and therefore the cumulative scenario for solid waste is not expected to exceed the permitted capacity of available landfills. Therefore, the Project's incremental contribution to capacity concerns would not be cumulatively considerable.

The Water Supply Assessment (WSA) determined water availability during normal, single dry, and multiple dry years during a 20-year projection in addition to the area's existing and planned future uses. Any adjacent cumulative projects that meets the criteria included in SB 610 (any project subject to the California Environmental Quality Act, is an industrial project of more than 40 acres in size regardless of size or type, or would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project) would be required to complete similar WSAs applicable to those development projects, which would ensure that sufficient groundwater supplies would be available to meet their demands during construction.

4.19.7 References

CalRecycle. 2021. Solid Waste Information System Facility/Site Activity Details. https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/733?siteID=4075. Accessed July 2021.

Colusa County. 2012. General Plan. Adopted July 31, 2012.

Colusa County. 2021. Solid Waste. https://www.countyofcolusa.org/146/Solid-Waste. Accessed March 2021.

Pacific Gas and Electric (PG&E). 2020. 2020 Joint Annual Report to Shareholders, February 25, 2021. Available online: https://s1.q4cdn.com/880135780/files/doc_financials/2020/ar/PCG012AR_2020_AR_Web.pdf. Accessed March 2021.

4.20 WILDFIRE

This section identifies and evaluates issues related to Wildfire in the context of the Project. It includes the physical and regulatory setting, the criteria used to evaluate the significance of potential impacts, the methods used in evaluating these impacts, and the results of the impact assessment. The County received scoping comments relating to Wildfire from the California Department of Forestry and Fire Protection and the Williams Fire Protection Authority, and those comments have been incorporated into the Draft EIR.

4.20.1 Existing Conditions

Wildland fire hazards in Colusa County have the potential to affect grass, forest, and brushlands, and when uncontrolled, they have the potential to cause property damage, human injury, and mortality. Wildfires ignite from both natural causes (e.g., lightning strikes) and human-caused ignition sources. The degree of wildfire hazard is determined primarily by fuel availability and type, topography, and weather. This analysis includes a discussion of wildfire risk on the three parcels that comprise the Project site, including Assessor Parcel Numbers 018-050-005-000, 018-050-006-000, and 018-050-013-000.

4.20.1.1 Climate and Topography

The Project site is located in northern California within the Central Valley. This region experiences hot, dry summers, mild winters, and annual rainfall averaging between roughly 5 and 25 inches. Elevation at the Project site ranges from approximately 144 to 331 feet above mean sea level. The majority of the precipitation in the Sacramento Valley occurs during the winter months. On average, Colusa County receives 24 inches of precipitation per year (Best Places 2021).

The Central Valley of California is a long (approximately 450 miles) and comparatively narrow lowland (with a width averaging about 50 miles) that has a central drainage outlet through Suisun Bay and into San Francisco Bay. The northern half of the province (the Sacramento Valley) and the southern half (the San Joaquin Valley) meet at the Sacramento-San Joaquin Delta, which is tidally influenced and therefore essentially at sea level. The Sacramento Valley is bounded on the west by the Coast Ranges, on the east by the Sierra Nevada Mountains, and to the north by the Klamath Mountains. The southern end is the Sacramento-San Joaquin Delta.

4.20.1.2 Vegetation/Fuels and Ignition Sources

Fuels can include natural materials, such as dead tree leaves, twigs, branches dead or live trees, brush, and dry grasses, as well as human-made structures. The Project site consists of rolling hills and flat grazing land with few trees and lacks heavy brush. A residence and several agricultural structures are present on-site. Potential ignition sources include both natural and human-caused in connection with vehicles, agricultural equipment, and residences.

4.20.1.3 Fire History

Historically, the California fire season extends from June through October of each year during the hot, dry months. According to the Colusa County General Plan Safety Element, “Wildfires are a potential hazard to development and land uses located in the foothill and mountain areas. The grassland, chaparral, woodland, and forest vegetation in areas of Colusa County, coupled with hot, dry summers, present extreme fire hazards during critical fire periods,” (Colusa County 2012).

Since 2010, the fire season throughout California has been getting longer, typically starting in May and extending into November, but wildfires can occur any time of the year. Since 2017, the California Department of Forestry and Fire Protection (CAL FIRE) has recorded 9 fires in Colusa County (CAL FIRE 2021):

- 2017 Sand Fire
- 2018 Stony Fire
- 2018 Ranch Fire
- 2018 River Fire
- 2019 Spring Fire
- 2020 Nail Fire
- 2020 Hill Fire
- 2020 Sites Fire
- 2020 August Complex Fire

4.20.1.4 CAL FIRE-Designated Wildfire Hazard Zones

CAL FIRE has published Draft Fire Hazard Severity Zones for both Local Responsibility Areas (LRAs) and State Responsibility Areas (SRAs). SRAs are the official boundaries where the State of California (through CAL FIRE) has the primary legal and financial responsibility for the prevention and suppression of wildland fires. The Project is entirely located within a moderately hazardous SRA which includes state agencies and counties (ArcGIS 2020).

4.20.1.5 California Public Utilities Commission-Designated Wildfire Hazard Zones

Pursuant to its Fire Safety Rulemaking, the California Public Utilities Commission (CPUC) mapped high fire threat areas where more stringent inspection, maintenance, vegetation clearance, and wire clearance requirements (as required by CPUC General Orders 95, 165, and 166, described in Section 4.20.2, below) would be implemented due to the elevated risk for power line fires. The CPUC High Fire Threat District Map identifies three tiers of elevated risk for fires associated with utilities. The Project site is not located in a CPUC designated High Fire Threat District (HFTD) (CPUC 2019).

4.20.1.6 Fire Protection Services

The primary fire protection services in the vicinity of the Project site are provided by the Williams Fire Protection Authority (WFPA). The WFPA's service area encompasses approximately 135 square miles in the city of Williams and the surrounding area (City of Williams 2012). The WFPA provides a full range of emergency response services, which include structural, wildland, and confined space fire suppression, basic response to hazardous materials incidents, and basic life support medical services. For additional details regarding fire protection services, see Section 4.15, *Public Services*.

4.20.2 Regulatory Setting

4.20.2.1 Federal

4.20.2.1.1 North American Electric Reliability Corporation Standards

The NERC is a nonprofit corporation comprising 10 regional reliability councils. The overarching goal of NERC is to ensure the reliability of the bulk power system in North America. To achieve its goal, the NERC develops and enforces reliability standards, monitors the bulk power systems, and educates, trains, and certifies industry personnel (NERC 2021). In order to improve the reliability of regional electric transmission systems and in response to the massive widespread

power outage that occurred on the Eastern Seaboard in 2003, NERC developed a transmission vegetation management program. The program is applicable to all transmission lines operated at 200 kV and above to lower voltage lines designated by the Regional Reliability Organization as critical to the reliability of the electric system in the region.

The plan, which became effective on April 7, 2006, establishes requirements of the formal transmission vegetation management program, which include identifying and documenting clearances between vegetation and any overhead, ungrounded supply conductors, while taking into consideration transmission line voltage, the effects of ambient temperature on conductor sag under maximum design loading, fire risk, line terrain and elevation, and the effects of wind velocities on conductor sway. The clearances identified must be no less than those set forth in the IEEE Standard 516-2003 (*Guide for Maintenance Methods on Energized Power Lines*) (IEEE 2003), which establishes minimum vegetation-to-conductor clearances in order to maintain electrical integrity of the electrical system.

4.20.2.2 State

4.20.2.2.1 2019 Strategic Fire Plan for California

Developed by the Board of Forestry and Fire Protection, the Strategic Fire Plan outlines goals and objectives to implement CAL FIRE's overall policy direction and vision. The 2019 Strategic Fire Plan aims to meet the following goals: 1) improve core capabilities; 2) enhance internal operations; 3) ensure health and safety; and 4) build an engaged, motivated, innovative workforce. The plan also discusses implementation and measures of success.

4.20.2.2.2 Fire Protection in California Fire Code and Public Resources Code

The California Fire Code is contained within Title 24, Chapter 9 of the California Code of Regulations. Based on the International Fire Code (IFC), the California Fire Code is created by the California Buildings Standards Commission and regulates the use, handling, and storage requirements for hazardous materials, including ignitable ones, at fixed facilities. Similar to the IFC, the California Fire Code and the CBC use a hazards classification system to determine the appropriate measures to incorporate to protect life and property.

The California Public Resources Code includes fire safety provisions that apply to SRAs during the time of year designated as having hazardous fire conditions. During the fire hazard season, these regulations restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on equipment that has an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire-suppression equipment that must be provided on-site for various types of work in fire-prone areas. Additional codes require that any person who owns, controls, operates, or maintains any electrical transmission or distribution line must maintain a firebreak clearing around and adjacent to any pole, tower, or conductors that carry electric current as specified in Public Resources Code Sections 4292 and 4293. Section 4292 requires that a 10-foot area around the base of poles be cleared of all flammable vegetation. The State's Fire Prevention Standards for Electric Utilities (14 CCR §§1250-1258) provide specific exemptions from electric pole and tower firebreak and electric conductor clearance standards and specifies when and where standards apply. Similar to the IFC, the California Fire Code and the CBC use a hazards classification system to determine the appropriate measures to incorporate to protect life and property. Section 608 of the IFC has been adopted by the State of California and Colusa County to minimize risk of fire from stationary

battery energy storage systems and to contain fire in the event of such an incident. Compliance with Article 480 of the National Electrical Code, which identifies insulation and venting requirements for stationary storage batteries, further reduces potential fire risk. Colusa County has adopted the California Fire Code in its Municipal Code as part of its building and construction regulations (Title 15, Chapter 15.10).

4.20.2.2.3 California Emergency Response Plan

Pursuant to the Emergency Services Act (Government Code §8550 et seq.), California has developed an Emergency Plan to coordinate emergency services provided by federal, State, and local governmental agencies and private persons. Response to hazardous materials incidents is one part of this plan. The plan is administered by the State Office of Emergency Services (Cal OES) which coordinates the responses of other agencies, including the USEPA, California Highway Patrol, California Department of Fish and Wildlife, the Regional Water Quality Control Board (in this case, the Central Valley Regional Water Quality Control Board), the local air districts (in this case, the San Joaquin Valley Air Pollution Control District) and local agencies. The State Emergency Plan defines the "policies, concepts, and general protocols" for the proper implementation of the California Standardized Emergency Management System. The Standardized Emergency Management System is an emergency management protocol that agencies within the state of California must follow during multi-agency response efforts whenever state agencies are involved.

4.20.2.2.4 California Public Utilities Commission General Orders

4.20.2.2.4.1 General Order 95

CPUC General Order 95 applies to work conducted by PG&E and the other Investor-Owned Utilities (IOUs),[1] including the construction and reconstruction of overhead electric lines. The replacement of poles, towers, or other structures is considered reconstruction and requires adherence to all strength and clearance requirements of this order. CPUC Decision 17-12-024 created enhanced requirements under Rule 18A, Rule 35, and Rule 38, which apply to overhead electric lines located in Tier 2 or Tier 3 HFTDs. The Project is not proposed in a Tier 2 or Tier 3 HFTD; therefore, the enhanced requirements would not apply to the gen-tie line that would be needed to connect the Project to the grid.

The CPUC has promulgated various rules to implement the fire safety requirements of General Order 95, including:

- Rule 18A, which requires utility companies take appropriate corrective action to remedy Safety Hazards and General Order 95 nonconformances. Additionally, this rule requires that each utility company establish an auditable maintenance program.
- Rule 31.2, which requires that lines be inspected frequently and thoroughly.
- Rule 35, which requires that vegetation management activities be performed in order to establish necessary and reasonable clearances. These requirements apply to all overhead electrical supply and communication facilities that are covered by this General Order.

[1] Investor-owned utilities (IOUs) are private electricity and natural gas providers. The CPUC regulates IOUs.

- Rule 38, which establishes minimum vertical, horizontal, and radial clearances of wires from other wires (CPUC 2018).

4.20.2.2.4.2 General Order 165

General Order 165 establishes requirements for the inspection of electric distribution and transmission facilities that are not contained within a substation. Utilities must perform "Patrol" inspections, defined as a simple visual inspection of utility equipment and structures that is designed to identify obvious structural problems and hazards, at least once per year for each piece of equipment and structure. "Detailed" inspections, where individual pieces of equipment and structures are carefully examined, are required every 5 years for all overhead conductors and cables, transformers, switching/protective devices, and regulators/capacitors. By July 1 of each year, each utility subject to this General Order must submit an annual report of its inspections for the previous year under penalty of perjury (CPUC 2017a).

4.20.2.2.4.3 General Order 166

General Order 166 Standard 1.E requires IOUs to develop a Fire Prevention Plan, which describes measures that the utility will implement to mitigate the threat of power line fires generally. Additionally, this standard requires that IOUs outline a plan to mitigate power line fires when wind conditions exceed the structural design standards of the line during a Red Flag Warning[2] in a high fire threat area. Fire Prevention Plans created by IOUs are required to identify specific parts of the utility's service territory where the conditions described above may occur simultaneously. Standard 1 also requires that utilities prepare an emergency response plan. PG&E's Emergency Response Plan, prepared in compliance with Standard 1, is described below. Standard 11 requires that utilities report annually to the CPUC regarding compliance with General Order 166 (CPUC 2017b). In compliance with Standard 1.E of this General Order, PG&E adopted a Fire Prevention Plan on September 30, 2017.

4.20.2.2.4.4 PG&E Company Emergency Response Plan

PG&E's Company Emergency Response Plan describes and formalizes PG&E's in-place plans and protocols for response to emergencies. The plan identifies potential hazards, available resources to respond to emergencies, internal communication protocols, and operational structure. Additionally, PG&E's Wildfire Safety Operations Center operates 24-hours a day during wildfire season (PG&E 2018).

4.20.2.2.4.5 PG&E Fire Prevention Plan

PG&E prepared a Fire Prevention Plan in compliance with CPUC Decision 12-01-032 (Fire Safety Order), Standard 1.E of General Order 166, and Senate Bill 1028. The Fire Prevention Plan summarizes PG&E's fire prevention and safety procedures and programs which include, but are not limited to: fire threat and risk area mapping, fire prevention pre-planning, enhanced fire detection efforts, building resiliency (including a wood pole test and treat program), operational practices to reduce the risk of fires, overhead inspections and patrols, fire prevention outreach and training programs, as well as pro-active responses to fire incidents.

[2] A "Red Flag Warning" is issued by the National Weather Service to alert fire departments of the onset, or possible onset, of critical weather and dry conditions that could lead to rapid or dramatic increases in wildfire activity.

4.20.2.2.4.6 Senate Bill 1028

Senate Bill 1028 (2016) requires each electrical corporation to construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire posed by those electrical lines and equipment, and makes a violation of these provisions by an electrical corporation a crime under state law. The bill also requires each electrical corporation to annually prepare a wildfire mitigation plan and submit to CPUC for review. The plan must include a statement of objectives, a description of preventive strategies and programs that are focused on minimizing risk associated with electric facilities, and a description of the metrics that the electric corporation uses to evaluate the overall wildfire mitigation plan performance and assumptions that underlie the use of the metrics. PG&E developed the 2017 Fire Prevention Plan in response to the requirements of Senate Bill 1028.

4.20.2.2.4.7 Senate Bill 901

Senate Bill 901 (2018) expanded upon the wildfire mitigation plan requirements of Senate Bill 1028 and included a number of provisions related to wildfire risk and management in California including, but not limited to, the following: budget adjustments related to emergency response and readiness, the creation of a CAL FIRE Wildfire Resilience Program and increasing the maximum penalties that can be issued by the CPUC to a public utility that fails to comply with CPUC requirements. Additionally, the legislation requires that utilities prepare wildfire mitigation plans that include elements specified in the bill such as the following:

1) A description of the preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks.
2) Protocols for disabling reclosers[3] and deenergizing portions of the electrical distribution system that consider the associated impacts on public safety, as well as protocols related to mitigating the public safety impacts of those protocols, including impacts on critical first responders and on health and communication infrastructure.
3) Particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the electrical corporation's service territory.

These wildfire mitigation plans are required to be reviewed by an independent evaluator.

4.20.2.2.4.8 PG&E Wildfire Safety Plan

Pursuant to Senate Bill 901 and Senate Bill 1028, PG&E's Wildfire Safety Plan was approved by the CPUC on May 3, 2019. The Wildfire Safety Plan describes PG&E's approach to mitigate wildfire risk and is accompanied by the expansion of its Public Safety Power Shutoff program. In order to address wildfire risk, PG&E has included the following Wildfire Reduction Measures:

- Enhanced Vegetation Management and Tree Removal in HFTD; Transmission, Distribution, and Substation Inspections in HFTDs;
- System Hardening (including replacing conductors, undergrounding lines where appropriate, replacing equipment and upgrading or replacing transformers, and installing more resilient poles) in HFTD;

[3] Reclosing devices, such as circuit breakers, are used to isolate circuit segments when abnormal system conditions are detected.

- Services coordinating the development and maintenance Situational Awareness (installing weather stations, cameras, and fire spread models);
- Establishment of Resilience Zones; and
- The Public Safety Power Shutoff program.

The objective of this plan is to address differentiated fire risks across the state of California, reduce ignition drivers, and risk-event frequency associated with overhead electric facilities (PG&E 2019).

4.20.2.3 Local

4.20.2.3.1 Colusa County General Plan

The Safety Element of the Colusa County General Plan outlines Colusa County's planning strategies regarding emergency response and preparedness, seismic and geologic hazards, flooding hazards, dam inundation, management and response, fire hazards, hazardous materials, and airport hazards. The following policy of the Safety Element is relevant to fire hazards:

> ***Policy SA 1-45:*** Require identification of adequate water source and supply system, including adequate fire flows, prior to development in very high, high or moderate Fire Hazard Severity Zones. Major industrial and other large-scale developments may be required to provide and maintain water storage facilities to ensure adequate water supply.

4.20.3 Thresholds of Significance

A project would result in significant impacts to wildfire if it would:

a) *Be located in or near state responsibility areas or lands classified as very high fire hazard severity zones, and would the project substantially impair an adopted emergency response plan or emergency evacuation plan;*

b) *Due to slope, prevailing winds, and other factors, would exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of wildfire;*

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

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

4.20.4 Impact Analysis

IMPACT 4.20-1: *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, and would the project substantially impair an adopted emergency response plan or emergency evacuation plan?* **(No Impact)**

The Project site is located in the Moderate SRA and is approximately 2.2 miles from the nearest Very High SRA. The primary fire protection services in the vicinity of the Project site are provided by the WFPA.

As discussed in Section 4.09, Hazards, and Section 4.17, Transportation, the Project would not have an impact on emergency response, evacuation routes, and emergency access during construction, and operation and maintenance. Since the Project is located in a rural area of Colusa County, it would not alter or impair any of the existing public roadways.

The Project would comply with the current Fire and Building Codes. The WFPA would be given a chance to review the Project plans to ensure there is sufficient access to the site prior to awarding building permits. The construction, and operation and maintenance of the Project would not result in any road closures of public roads, which could impact the response time of emergency vehicles. Heavy vehicles during construction of the Project have the potential to interfere with emergency response or emergency evacuation. However, since the Project site is located in a rural area and considering its proximity to the emergency response stations, impacts to emergency response and evacuation during construction would be unlikely. Only occasional, on-site maintenance would be required, which would usually require up to four workers, but may occasionally require 5 to 30 workers. Due to the infrequency of maintenance activities to the Project site, operation and maintenance is not anticipated to impair emergency access or evacuation plans.

In section 4-20.2.2.1, *2019 Strategic Fire Plan for California*, the overarching goals for CAL FIRE are outlined. Although the Project is located in a SRA, the Project is not anticipated to conflict with the implementation of the 2019 Strategic Fire Plan for California.

The Project would have no impact as it would not conflict with any emergency response plan or emergency evacuation plan.

IMPACT 4.20-2: *Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of wildlife?* **(Less than Significant Impact)**

Construction and Decommissioning

During Project construction and decommissioning, the primary fire hazards would be heat or sparks from vehicles and construction equipment. These hazards could potentially ignite dry vegetation at the site, especially during the warmer, dry months between June and October. Additionally, construction activities such as welding and grinding could generate sparks which would increase the likelihood of ignition. Therefore, dependent on the time of year and location of construction activities at the Project site, there could be a temporary increase in exacerbated fire risk in the area.

As discussed in Section 4.20.2 Regulatory Setting, wildfires release large amount of air pollutants, which can pose as a harmful exposure to first responders such as firefighters, as well as the surrounding communities. The Project site includes relatively flat topography with some rolling hills, and sparse vegetation. While the use of vehicles and equipment on the Project site could introduce an ignition source that could lead to the spread of wildfire, the risk of such an impact would be low. Due to the short-term duration of construction as well as the existing flat topography, lack of vegetation on-site, and distance to population centers, a potential ignition from Project

construction is not likely to lead to the spread of wildfire. Therefore, impacts to wildfire risk from Project construction and decommissioning would be less than significant.

Operation

The Project would include battery energy storage systems and other supporting electrical equipment elements that may be susceptible to fire. However, each battery energy storage system used on-site would be designed, operated, and ultimately disposed of in compliance with all applicable requirements including the California Fire Code, Section 608 of the IFC, which has been adopted by the State of California, to minimize risk of fire from stationary battery energy storage systems and contain fire in the event of such an incident, and Article 480 of the National Electrical Code, which identifies insulation and venting requirements for stationary storage batteries to further reduce potential fire risk. Additionally, the battery energy storage system would include fire protection systems. Intermittent maintenance activities could increase the potential for ignition on-site due to the presence of vehicles and use of equipment; however, given the low frequency and nature of maintenance activities as well as the site topography, vegetation, and surrounding land uses, Project operation and maintenance would not significantly exacerbate existing wildfire risks. The potential impacts related to wildfires would be less than significant.

IMPACT 4.20-3: *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?* **(No Impact)**

The Project would require water for dust suppression during construction and decommissioning activities as well as for emergency fire suppression during operation of the Project. Additionally, fire breaks would be required along the Project boundary. These measures are considered to be part of the Project. The environmental impacts that could result from implementing these measures have been analyzed throughout this document based on a resource-by-resource basis, and the installation and maintenance of additional infrastructure that could potentially exacerbate wildfire would not be required.

IMPACT 4.20-4: *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?* **(Less than Significant Impact)**

As discussed in Impact 4.20-1, the Project site is located in a moderate SRA. However, since the Project does not include housing and is in a rural area, it is not anticipated to expose people to an increased risk associated with flooding, landslides, or post-fire slope instability as a result of structures built to support the Project.

As discussed under threshold b), Project construction would have a less than significant impact on wildfire risk due to the short duration of construction and site topography, vegetation, and the distance between the Project Site to population centers.

Section 4.10, Hydrology and Water Quality, Impact 4.10-3, identifies that during construction the implementation of a SWPPP and BMPs related to erosion control would reduce potential impacts

related to drainage patterns during construction to a less-than-significant level. Following the completion of construction, drainage patterns on-site would be similar to existing conditions. Thus, the Project would not result in changes to runoff or drainage patterns that has the potential to exacerbate downslope or downstream flooding and thereby expose people or structures to associated risks.

Since the Project would have low potential to exacerbate wildfire risk, it also would not pose a substantial risk of causing post-fire slope instability. Due to the fact that the Project site is located on flat land, the Project would not be located on slopes that could contribute to the occurrence of landslides or flooding. Therefore, the Project would have no impact with regard to the Project's potential to exacerbate the risk of flooding and mudslides as a result of post-fire slope instability

4.20.5 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades, interconnection facilities, and a span of transmission lines that would extend from where the Applicant's gen-tie line terminates at the boundary of PG&E's Cortina Substation to the available PG&E Cortina substation bay. The improvements would include the installation of a grounding system, disconnect switches, surge arresters, outdoor lighting and outlets, and fiber termination for the gen-tie line. The improvements would be made within the existing Cortina Substation footprint. As a result of these improvements, there would be minimal impacts to wildfires. These improvements are not likely to impeded or conflict with any emergency plans or evacuation routes. Nor would the impacts exacerbate wildfire risks and the potential pollutants caused by wildfires. The improvements would not build any housing facilities, thus, would not increase the risk of direct impacts caused by wildfires. Therefore, there would be no significant impacts and no mitigation would be required.

4.20.6 Cumulative Impacts

The Project would have no impact resulting in the impaired ability to implement an emergency response plan. The Project would not cause or contribute to any cumulative impacts to emergency response or evacuation. The potential for the Project or an alternative to cause or contribute to a potential significant cumulative impact with respect to the remaining wildfire considerations is evaluated below.

The geographic scope for potential cumulative impacts to wildfire encompasses the Project site and the surrounding areas, which consist of agricultural land uses. Ongoing impacts relating to wildfire considerations of past projects are reflected in the environmental setting described in Section 4.20.1. Environmental and cumulative conditions in the geographic scope are not conducive to the rapid spread of uncontrolled wildfire and while existing land uses could provide ignition sources, operating solar projects and agricultural uses do not present a significant risk with respect to ignition sources. In combination with other Projects in the vicinity, the Project could increase the potential for ignition sources; however, given the flat topography and lack of vegetation within the geographic scope of cumulative impacts, the impact of an increase in ignition sources of the Project in combination with the incremental impacts of other projects would be less than significant. Therefore, the Project would not contribute to significant cumulative impacts to wildfire.

4.20.7 References

ArcGIS. 2020. California Fire Hazard Severity Zone Viewer. Available at: https://www.arcgis.com/home/item.html?id=789d5286736248f69c4515c04f58f414. Accessed February 2021.

Best Places. 2021. Available online at: https://www.bestplaces.net/climate/county/california/colusa. Accessed July 2021.

California Department of Forestry and Fire Protection (CAL FIRE). 2021. Incidents. https://www.fire.ca.gov/incidents/. Accessed February 2021.

California Public Utilities Commission (CPUC). 2017a. General Order Number 165, Inspection Requirements for Electric Distribution and Transmission Facilities, Amended December 14, 2017, by D17-12-024 in R.15.05-006.

CPUC. 2017b. General Order Number 166, Standards for Operation, Reliability, and Safety During Emergencies and Disasters, Amended December 14, 2017, by D17-12-024 in R.15.05-006.

CPUC. 2018. General Order Number 95, Rules for Overhead Electric Line Construction, Amended May 31, 2018, by D18-05-042 in R.18 and R80.1-A2.

CPUC. 2019. CPUC FireMap. Available at https://ia.cpuc.ca.gov/firemap/#. Accessed July 2021.

City of Williams. 2012. 2012 General Plan Update. Available online at: http://www.cityofwilliams.org/Chapter%202,%20Background%20Analysis%20(May%202012b).pdf. Accessed February 2021.

Colusa County. 2012. Colusa County General Plan.

The Institute of Electrical and Electronics Engineers, Inc (IEEE) Power Engineering Society. 2003. IEEE Guide for Maintenance Methods on Energized Power Lines.

North American Electric Reliability Corporation. 2021. About NERC. Available online at: https://www.nerc.com/AboutNERC/Pages/default.aspx. Accessed July 2021.

Pacific Gas and Electric Company (PG&E). 2018. Company Emergency Response Plan. October 31, 2018.

PG&E. 2019. Pacific Gas and Electric Company Amended 2019 Wildfire Safety Plan. Available online at: https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/Wildfire-Safety-Plan.pdf. Accessed February 2021.

5 COMPARISON OF ALTERNATIVES

5.1 INTRODUCTION

In accordance with the CEQA Guidelines Section 15126.6, this Draft EIR contains a comparative impact assessment of alternatives to the proposed Project. The primary purpose of an alternatives analysis is to provide decision-makers and the public with a reasonable number of feasible project alternatives that could attain most of the basic project objectives, while avoiding or reducing any of the project's significant adverse environmental effects. Important considerations for this alternative analysis are noted below (as stated in CEQA Guidelines Section 15126.6).

- An EIR need not consider every conceivable alternative to a project;
- An EIR should identify alternatives that were considered by the lead agency, but rejected as infeasible during the scoping process;
- Reasons for rejecting an alternative include:
    - Failure to meet most of the basic project objectives;
    - Infeasibility; or
    - Inability to avoid significant environmental effects.

5.1.1 Significant Unavoidable Impacts

CEQA requires that alternatives to a proposed project have the potential to avoid or substantially lessen one or more significant effects of the project (CEQA Guidelines Section 15126.6). At the Project and/or cumulative level, the Draft EIR has not identified any environmental issues that may result in significant and unavoidable impacts.

5.1.2 Alternatives to the Proposed Project

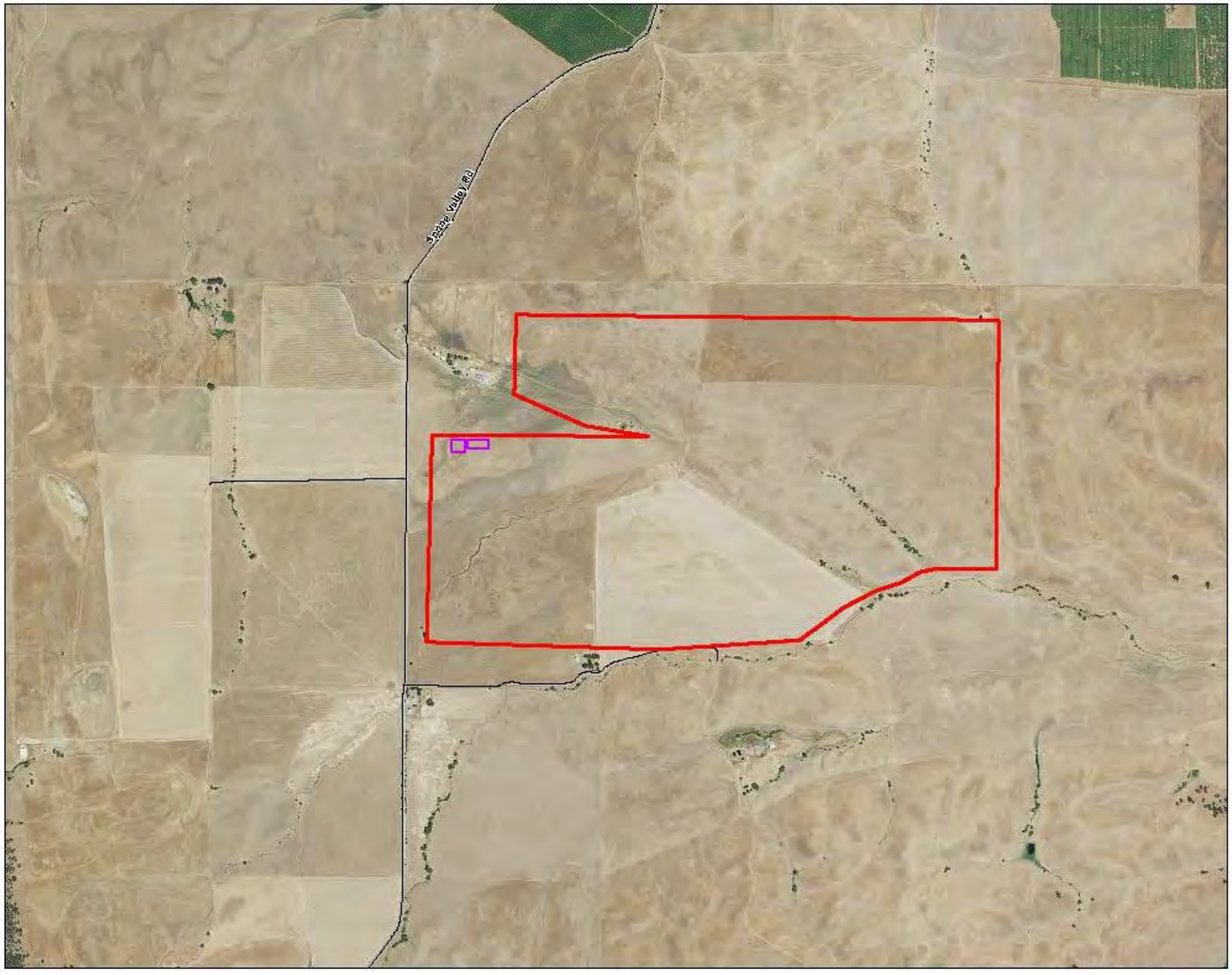
The four alternatives to the proposed Project analyzed in this section are as follows:

No Project Alternative: The Project site would not be developed and would remain in its existing condition and continue to experience a reduction in agricultural production from water resource allocation constraints.

Distributed Solar Alternative: The Distributed Solar Alternative would develop solar PV systems on the existing rooftops throughout Colusa County.

Reduced Acreage Alternative: The Project site would be reduced by 342 acres (from 1,024 acres to 682 acres). See Figure 5-1. This alternative would otherwise be as described in Chapter 2, *Project Description*.

Northeast Site Alternative: An alternate site which consists of 15 contiguous parcels totaling approximately 917 acres and is located approximately 5 miles northeast of the Project site, on the north side of Highway 20 and just west of Williams. See Figure 5-2.



Janus Solar Project

Colusa County, CA

Figure 5-1: Reduced Acreage Alternative

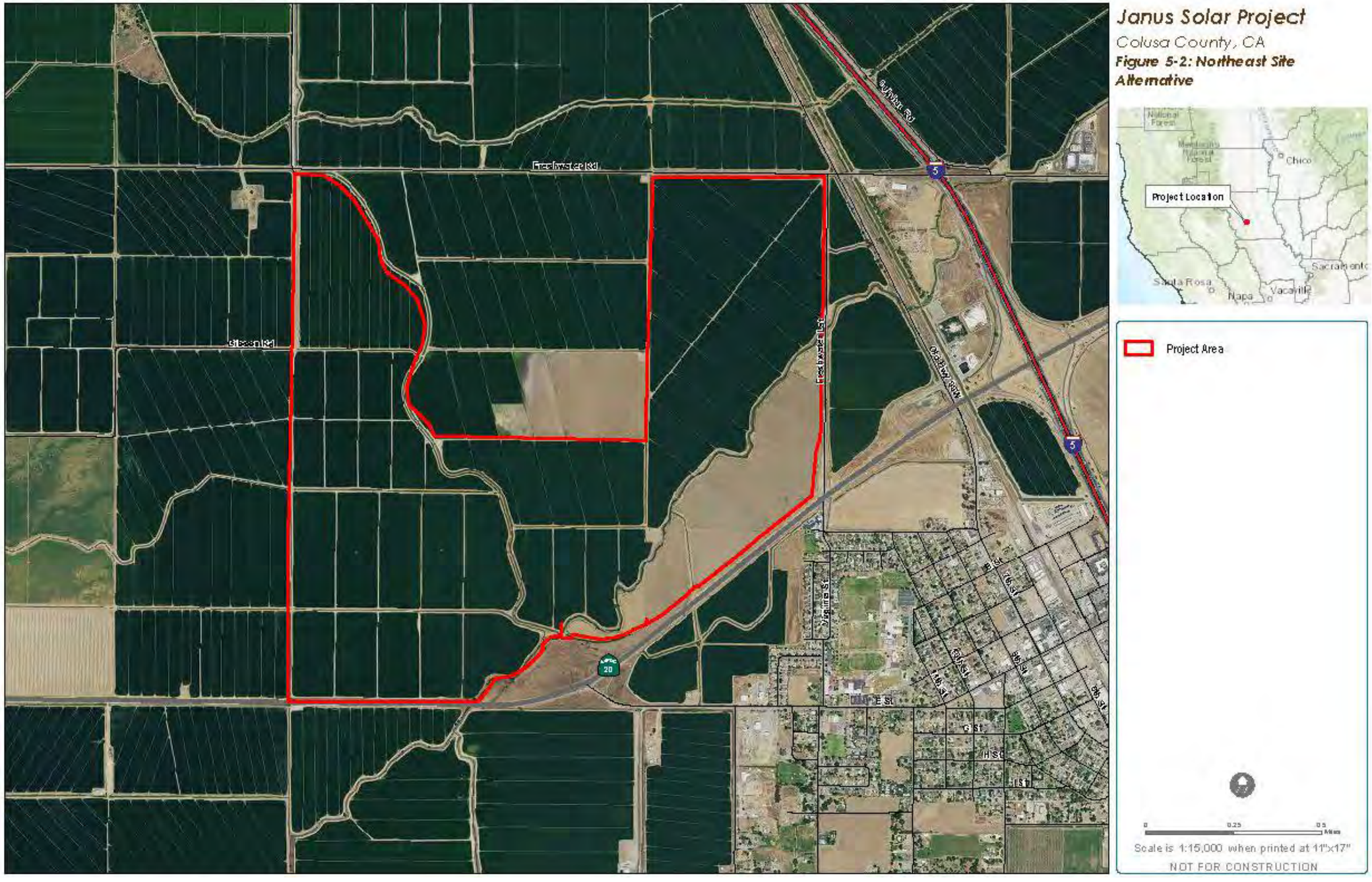
Project Area

Substation and Battery Storage

0 0.25 0.5 Miles

Scale is 1:15,000 when printed at 11"x17"

NOT FOR CONSTRUCTION


Janus Solar Project
Colusa County, CA
Figure 5-2: Northeast Site Alternative
Project Location
Chico
Sacramento
Santa Rosa
Napa
Vacaville
Project Area
Freshwater Rd
Gibson Rd
Sycamore Rd
Logan Creek Rd
Old Highway 99W
5
20
Virginia St
E St
G St
H St
I St
14th St
15th St
16th St
17th St
18th St
0
0.25
0.5
Miles
Scale is 1:15,000 when printed at 11"x17"
NOT FOR CONSTRUCTION

A comparison of the alternatives is included in Table 5-1 and the following sections.

Table 5-1. Alternatives Comparison

Resource Area	Project	No Project	Distributed Solar	Reduced Acreage	Northeast Site
Aesthetics	Impacts determined to be less than significant	-	-	=/-	+
Agriculture/ Forestry	Impacts determined to be less than significant with mitigation incorporated.	-	-	=	+
Air Quality	Impacts determined to be less than significant with mitigation incorporated.	-	-	=/-	=
Biological Resources	Impacts determined to be less than significant with mitigation.	-	-	=/-	=/+
Cultural Resources	Impacts determined to be less than significant with mitigation incorporated.	-	=/-	=/-	=/+
Energy	Impacts determined to be less than significant.	-	=/+	=/+	=
Geology, Soils, Paleontology	Impacts determined to be less than significant with mitigation incorporated.	-	-	=/-	=
Greenhouse Gas Emissions	Impacts determined to be less than significant.	+	=/+	=/+	=
Hazards and Hazardous Materials	Impacts determined to be less than significant.	-	-	=	=
Hydrology and Water Quality	Impacts determined to be less than significant.	-	-	=	=
Land Use and Planning	No impacts determined.	-	=	=	=
Mineral Resources	No impacts determined.	-	=	=	=
Noise	Impacts determined to be less than significant with mitigation incorporated.	-	=/-	=/-	=/+
Population and Housing	Impacts determined to be less than significant.	-	=	=	=
Public Services	No impacts determined.	-	=	=	=
Recreation	No impacts determined.	-	=	=	=
Transportation	Impacts determined to be less than significant.	-	=/-	=	=/+
Tribal Resources	Impacts determined to be less than significant with mitigation incorporated.	-	-	=/-	=/+
Utilities	Impacts determined to be less than significant.	-	-	=/-	=
Wildfire	Impacts determined to be less than significant.	-	-	=/-	=

"-" = less impacts than the Project
"+" = greater impacts than the Project
"=" = similar impacts to the Project

5.2 PROJECT OBJECTIVES

1. Establish a PV solar power-generating facility of a sufficient size and configuration to produce up to 80 MW (AC) of electricity at the point of interconnection (POI) in a cost-competitive manner;
2. Assist California utilities in meeting their obligations under California's RPS Program and SB 100, which calls for 100 percent of all electricity sold in California to come from carbon-free resources by 2045, including 60 percent renewables by 2030;
3. Assist California utilities in meeting their obligations under CPUC's Energy Storage Framework and Design Program;
4. Provide for the economically viable, commercially financeable, and environmentally beneficial use of the site's water-limited agricultural capacity;
5. Develop a site in proximity to transmission infrastructure in order to minimize environmental impacts;
6. Facilitate grid integration of intermittent and variable PV solar generation and minimize line losses associated with off-site storage by collocating battery storage at the PV solar facility site; and
7. Develop a solar power generation facility in Colusa County, which would support the economy by investing in the local community, creating local construction jobs, and increasing tax and fee revenue to the County.

Table 5-2. Alternatives and Objectives

Project Objective	Project	No Project	Distributed Solar	Reduced Acreage	Northeast Site
1. Establish a solar generating facility that would generate up to 80 MW in a cost competitive manner.	Y	N	N	N	N
2. Help to meet SB 100 which would obtain 100 percent electricity by 2045.	Y	N	Y	Y[1]	Y[1]
3. Assist California utilities to meet their obligations under CUPC's Energy Storage Framework and Design Program.	Y	N	Y	Y	Y
4. Provide for the economically viable, commercially financeable, and environmentally beneficial use of the site's water-limited agricultural capacity.	Y	N	N	N	N
5. Develop a site in proximity to transmission infrastructure in order to minimize environmental impacts.	Y	N	N	Y	N
6. Facilitate grid integration of intermittent and variable PV solar generation and minimize line losses associated with off-site storage by collocating battery storage at the PV solar facility site.	Y	N	N	Y	Y
7. Develop a solar generating facility in Colusa County that would support the local economy.	Y	N	N	N	Y

[1]The alternative would help meet the goals of SB 100; however, in a reduced capacity compared to the Project.

5.3 NO PROJECT ALTERNATIVE

For the No Project Alternative, the Project site would continue to be used for agricultural grazing and the existing environmental setting would be maintained. Changes to the environmental setting, including changes to visual resources, habitat, and land use/agriculture would not occur. Project related impacts such as construction noise, traffic, and air emissions would not occur, and potential ground disturbance impacts to cultural and tribal resources and wildlife habitat would not occur. Additionally, the environmental benefits associated with energy resources and GHG reduction related to renewable energy generation would not be realized from solar development of the site. It is reasonable to assume that that the land will remain in agricultural production for the foreseeable future if the project is not approved based on current plans and consistent with available infrastructure and community services.

Under the No Project Alternative, all project related impact would be avoided due to the lack of development of the Project site. There would be no new impacts to the environment. No feasibility issues have been identified which would eliminate the No Project Alternative from consideration; however, the No Project Alternative would not meet any of the Project objectives. The No Project Alternatives is being analyzed in this because this analysis is required by CEQA.

5.3.1 Impact Analysis

Aesthetics

Under this alternative, there would be no development of solar PV panels and its ancillary structures. No changes in the visual setting would occur, therefore there would be no impacts.

Agriculture/Forestry

Under the No Project Alternative, there would be no need for a Williamson Act contract cancellation. The Project site would continue to be used for grazing and other agricultural uses. As a result, this alternative would not result in any impacts to Agriculture or Forestry Resources.

Air Quality

The No Project Alternative would not create new sources of regional air emissions; therefore, there would be no impact to air quality.

Biological Resources

Since there will be no changes to land uses under this alternative, no impacts to existing biological resources on, or surrounding the proposed Project site would occur.

Cultural Resources

Most of the proposed Project area has been disturbed by past agricultural activities. This alternative would not include any new type of ground disturbing activities or involve removal of any cultural resources. No impacts to cultural resources would occur.

Energy

This alternative would not introduce new land uses that would generate construction or operational energy demands. No impacts to existing energy resources would occur, however, the

environmental benefits associated with energy resources related to renewable energy generation would not be realized from solar development of the site.

Geology, Soils, and Paleontology

This alternative would not include any new development on the site, any new type of ground disturbing activities, or involve removal of any paleontological resources. No impacts to geology and soil resources would occur.

Greenhouse Gas Emissions

This alternative does not include uses that would create new sources of regional air emissions and contribute to global climate change. There would be no impact to GHG and global climate change, however, the environmental benefits associated with GHG reduction related to renewable energy generation would not be realized from solar development of the site.

Hazards and Hazardous Materials

This alternative would not include any new development on the site or other ground disturbing activities. No impacts associated with the accidental release of hazardous substances during construction and operation or with the potential for disturbing unknown hazardous materials during construction would occur.

Hydrology and Water Quality

This alternative would not include any new development on the site or other ground disturbing activities that would alter the hydrology of the site; therefore, no impacts would occur.

Land Use and Planning

This alternative would not include any new development on the site or involve any activities that would not be consistent with the County's general plan policies and Zoning Ordinance. As a result, there would be no impact to Land Use and Planning.

Mineral Resources

This alternative would not include any new development on the site or other ground disturbing activities. There would be no changes to the physical environment which could result in a loss of the availability of a known mineral resource that may be of value to the region or of a locally important mineral resource recovery site; therefore, no impacts would occur.

Noise

This alternative would not introduce new land uses that would generate construction or operational noise that would increase the ambient noise levels in the surrounding area. No impacts to existing noise levels would occur.

Population and Housing

This alternative would not introduce solar facilities into an undeveloped area and would not result in the temporary or permanent increase in the workforce concentrated at a single construction site; therefore, no impacts would occur.

Public Services

Under the No Project Alternative, no new demands on public services would occur; therefore, no impacts would occur.

Recreation

Under the No Project Alternative, no new demands on recreational resources would occur; therefore, no impacts would occur.

Transportation

Under this alternative, development of the proposed Project site would not occur. The proposed Project site would remain undeveloped and traffic volumes in the surrounding area would not increase as a result of this alternative. This alternative would not have any impacts to the existing transportation system or traffic volumes.

Tribal Cultural Resources

Most of the proposed Project area has been disturbed by past agricultural activities. This alternative would not include any new type of ground disturbing activities or involve removal of any tribal cultural resources. No impacts to tribal cultural resources would occur.

Utilities

Under the No Project Alternative, no new utilities would be needed for the operation of the Project site, therefore no impacts would occur.

Wildfire

This alternative would not include any new development on the Project site or involve any activities that would increase risk of wildfire. As a result, there would be no impact associated with wildfire.

Conclusion and Relationship to Project Objectives

The No Project Alternative would result in the continuation of existing conditions on the proposed Project site. This would be the environmentally superior alternative as no impacts or less than significant impacts would occur if the proposed Project site were to remain undeveloped. However, the six Project objectives would not be met, and the environmental benefits associated with energy resources and GHG reduction related to renewable energy generation would not be realized from solar development of the Project site.

5.4 DISTRIBUTED SOLAR ALTERNATIVE

The Distributed Solar Alternative would develop solar PV systems on the existing rooftops throughout Colusa County. The Distributed Solar Alternative was selected for analysis because it would eliminate the need to convert rangeland to energy generation and because it would reduce other environmental impacts compared to the proposed project.

5.4.1 Impact Analysis

Aesthetics

Under the Distributed Solar Alternative, no undeveloped land would be altered or developed. There is potential for the solar panels to be visible by viewers from ground level or neighboring properties, dependent on the height of the rooftops. While the solar panels may result in a contrast to the existing roof color, the lines and form would be similar to the structures. These added visual elements are expected to have minimal contrast with the existing views of these rooftops. As the solar panels would be distributed on rooftops throughout Colusa County, changes to existing views would be reduced under this alternative. Therefore, the impacts of the Distributed Solar Alternative would be reduced compared to the proposed Project.

Agriculture/Forestry

Under the Distributed Solar Alternative, no undeveloped land would be altered or developed. There would be no need for a Williamson Act contract cancellation. The Project site would continue to be used for grazing and other agricultural uses. If solar PV systems were to be installed on buildings located on agricultural properties, they would not result in farmland being converted into non-agricultural use. As a result, the Distributed Solar Alternative would not result in any physical changes to Agriculture or Forestry Resources. Therefore, under this alternative the Project's less than significant impact due to conflict with an existing Williamson Act contract would be reduced to no impact.

Air Quality

Under this alternative, no land use would be developed or altered. The Distributed Solar Alternative would avoid or substantially reduce impacts to air quality from ground disturbance activities. The Distributed Solar Alternative would result in more vehicle trips compared to the proposed Project as on-site construction equipment and worker vehicles would be dispersed throughout the County, requiring multiple, distributed trips. Energy generated on the rooftops could be used for on-site use or could be distributed to multiple customers through a community solar arrangement which would allow multiple customers to use the energy from a single source. The power generated under this alternative would not require construction of new transmission facilities or a new energy substation. The Distributed Solar Alternative may result in the generation of lower emissions, reducing the Project's less than significant impact.

Biological Resources

Under the Distributed Solar Alternative, no undeveloped land would be altered or developed. The Project would still generate 80 MW of electricity, while avoiding the development or disturbance of the proposed Project site or other undeveloped sites. This alternative would avoid impacts to Biological Resources.

Cultural Resources

Compared to the Project, the Distributed Solar Alternative would entail a similar or larger work area, but a dispersed distribution of solar modules on rooftops throughout the County. Because solar panels would be attached to existing buildings, there would be no ground disturbing activities, eliminating the potential for inadvertent disturbance of previously unknown cultural resources. However, the installation of solar modules may result in impacts to architectural historical resources

(Kandt et al. 2011; National Park Service 2021). Mitigation measures would be required to reduce potentially significant impacts to architectural resources. The Distributed Solar Alternative would have similar and marginally reduced impacts to cultural resources.

Energy

This Alternative, like the Project, would assist the state of California in achieving or exceeding its RPS and GHG emissions reduction objectives by developing and constructing a new California RPS-qualified 80 MW solar power generating facility. Under the Distributed Solar Alternative, no undeveloped land would be altered or developed, however, greater, or similar acreage (768 acres or more of total rooftop area) may be required to attain the Project's 80 MW of solar PV generating capacity, and due to the distributed and individual project nature of the alternative, achieving 80 MW capacity would not be guaranteed. Under this alternative, less energy may be generated from the roof-mounted solar PV panels compared to the proposed Project's single-axis tracking system, which is designed to optimize power production of the solar panels by ensuring the proper orientation to the sun both daily and seasonally. The Distributed Solar Alternative would result in more fuel consumption compared to the proposed Project as on-site construction equipment and worker vehicles would be dispersed throughout the County, requiring multiple, distributed trips. The impact of the Distributed Solar Alternative would result in no significant impacts to Energy, similar to the Project.

Geology, Soils, and Paleontology

The Distributed Solar Alternative would not involve ground disturbing activities; therefore, no impacts to previously unknown paleontological resources would occur and impacts would be reduced compared to the Project.

Greenhouse Gas Emissions

Under the Distributed Solar Alternative, no undeveloped land would be altered or developed; thus, this alternative would not involve ground disturbing activities that may result in decreased GHG emissions. Energy generated by the solar PV systems may be used for on-site uses or may be shared with multiple customers through a community solar arrangement that would allow the solar generated at one site to be shared. The Distributed Solar Alternative would not require the construction of new electrical substations or transmission lines, which would also contribute to the reduction of GHG generated by construction as compared to the proposed Project. However, vehicle trips needed for construction and maintenance of the solar PV systems would be dispersed throughout the County, potentially resulting in additional, and more dispersed trips. This alternative would result in a less than significant impact in regard to the generation of GHG emissions, similar to the Project.

Hazards and Hazardous Materials

Under the Distributed Solar Alternative, no undeveloped land would be altered or developed, and would not require new transmission lines and energy substations to be built. While ground disturbing construction equipment would not be required, equipment for construction of the solar facilities and for the operation similar to the Project would be required. Operation of this alternative would require relatively similar vehicles including light duty trucks and other light equipment for the maintenance of the rooftop solar PV systems. On-site diesel and gasoline storage would not be required for refueling of operating and maintenance vehicles. Little to no hazardous materials

would be used and the construction of substations and transmission lines would not be necessary. Therefore, the impacts of this alternative would be reduced as compared to the proposed Project and would be less than significant.

Hydrology and Water Quality

Under the Distributed Solar Alternative, no undeveloped land would be altered or developed; however, dependent on the type of solar models used, a similar or greater amount of acreage (768 acres or more of total rooftop area) may be required to meet the Project's 80 MW solar PV generating capacity. The Distributed Solar Alternative would not result in any significant impact to water or hydrology as there would be no ground disturbance activities associated with this alternative. Therefore, the impacts of this alternative would be reduced as compared to the proposed Project and would be less than significant.

Land Use and Planning

The Distributed Solar Alternative would develop existing rooftops throughout Colusa County for solar PV systems which would be mounted on rooftops. The installation of the rooftop solar systems would be required to be consistent with the County's general plan policies and Zoning Ordinance. As a result, there would be no impact to Land Use and Planning.

Mineral Resources

Under the Distributed Solar Alternative, no undeveloped land would be altered or developed and there would be no ground disturbing activities. Thus, there would be no changes to the physical environment which could result in a loss of the availability of a known mineral resource that may be of value to the region or of a locally important mineral resource recovery site. The Distributed Solar Alternative would have no impacts to mineral resources, similar to the Project.

Noise

This alternative would develop existing rooftops throughout Colusa County to be used for solar PV systems. The amount of acreage may be similar or greater (768 acres or more of total rooftop area) may be necessary to meet the 80 MW solar PV generating capacity. Vehicle trips for construction and maintenance of the solar panels would be necessary and dispersed with individual site locations. No new transmission lines would be required for the solar PV systems. The intensity of construction and operational related noise impacts would be reduced as construction would be minimized to support small-scale installations dispersed throughout the County; however, the construction would often be located adjacent to sensitive uses. The Distributed Solar Alternative would be less than significant to both noise and vibration impacts from construction related activities and operational noise impacts, similar to the Project.

Population and Housing

This alternative would not introduce solar facilities into an undeveloped area and would not result in the temporary or permanent increase in the workforce concentrated at a single construction site. Similar to the Project, a majority of the construction workers would be hired from the existing workforce in the regional area. This alternative would result in a less than significant impact in the potential inducement of population growth and no impact relating to the displacement of people or existing housing, similar to the Project.

Public Services

Like the Project, this alternative would not result in an increase in population and the associated increase in demands on public services and therefore result in no impact, similar to the Project.

Recreation

Construction workers who are available to work on this alternative would most likely reside in the region. Therefore, this alternative would not result in the population growth within Colusa County, and would not affect the County's ability to meet the existing demand for park and recreation services, similar to the proposed Project.

Transportation

Under the Distributed Solar Alternative, solar PV systems would be installed on the existing rooftops throughout Colusa County. For this alternative the vehicles to be used for construction and maintenance would be dispersed throughout the County to the individual sites. This dispersion would reduce the number of vehicle trips generated on a single roadway segment to a level that would not be noticeable to the average motorist. The impacts under the Distributed Solar Alternative would be less than significant and marginally less than the Project.

Tribal Cultural Resources

Compared to the Project, the Distributed Solar Alternative would entail a similar work area, but a dispersed distribution of solar modules on rooftops throughout the County. Because solar panels would be attached to existing buildings, there would be no associated ground disturbing activities, eliminating the potential for inadvertent disturbance of previously unknown tribal cultural resources. The Distributed Solar Alternative would have reduced impacts to tribal cultural resources compared to the Project.

Utilities

There would be no new land disturbance or alteration associated with this alternative. Storm water drainage would not be affected by this alternative. The energy generated could either be used for on-site uses or could be share with multiple customers through a community solar arrangement. The installation, operation, maintenance of rooftop solar systems would rely on the utilities existing at the supporting structures, resulting in less generated water demands, solid waste, wastewater or stormwater need compared to the Project. The potential impacts to utilities would be reduced compared to the Project and would also be less than significant.

Wildfire

There would be no new land disturbance or alteration associated with this alternative. Thus, construction equipment would not be needed for site preparation or grading. Trucks would be used to transport materials to the individual sites, and the tools used for construction pose a potential risk for sparking; however, the existing rooftops would not provide fuel for fire in the way the grasses and other agricultural plants may. Operation and maintenance may require similar equipment. There would be no need for on-site diesel or gasoline storage. Because the construction of transmission lines would not be necessary, the impacts of the Distributed Solar Alternative would be substantially reduced as compared to the proposed Project.

Conclusion and Relationship to Project Objectives

The Distributed Solar Alternative would have similar but slightly reduced impacts compared to the Project due to elimination of ground disturbance. However, the energy generation could be reduced, take longer to achieve, and would require many individual projects that are not guaranteed to occur. The Distributed Solar Alternative would not efficiently meet the Project Objectives to generate 80 MW of electricity at the POI (Project Objective 1), would not be economically viable to develop or commercially financeable (Project Objective 4) due to its reduced capacity and unpredictable implementation, and it would generate less economic benefits to the County (Project Objective 7). It would be feasible, but not an efficient or effective alternative.

5.5 REDUCED ACREAGE ALTERNATIVE

Under the Reduced Acreage Alternative, the site size would be reduced by 342 acres (from 1,024 acres to 682 acres). See Figure 5-1. This alternative would otherwise be as described in Chapter 2, *Project Description*. The Reduced Acreage Alternative was selected for analysis because it would slightly reduce environmental impacts and leave more land in agriculture compared to the project as proposed.

5.5.1 Impact Analysis

Aesthetics

Under the Reduced Acreage Alternative, all visual elements of the Project would remain the same as the Project, except for the reduction in the area of the Project site. The area of the Project site would decrease, removing the northwest parcel and small additional setbacks from the northern, western, and southern boundaries. Visual impacts associated with the Project are less than significant. The reduced footprint of the Project site would further reduce the less than significant visual impact of the solar generating facility, especially for views from KOPs 1, 5, and 6. This alternative would not be visible from KOPs 2 and 4, similar to the Project. Views from KOP 3 would be similar to the Project. The visual impact of the Reduced Acreage Alternative would reduce the less than significant impact of the proposed Project.

Agriculture/Forestry

Under the Reduced Acreage Alternative, a Williamson Act contract cancellation would still be required. Solar PV facilities would still be installed on agricultural properties under a Williamson Act contract, though less acreage would be removed from the Williamson Act contract. With the implementation of Mitigation Measure **AGR-1**, impacts would be less than significant. Therefore, under this alternative, the less than significant impact after mitigation due to conflict with an existing Williamson Act contract would be similar to the impact of Project.

Air Quality

The Reduced Acreage Alternative would develop solar PV facilities on the Project site, but with a reduced footprint, such that less land would be developed or altered. The Reduced Acreage Alternative would proportionately reduce impacts to air quality from ground disturbance, construction, and decommissioning activities. Vehicle trips would be reduced but not eliminated as they would be needed during the construction phase and for maintenance of the solar facility, and heavy equipment would still be required for construction. Compared to the Project, the air

quality impacts of the Reduced Project Alternative would be slightly less than the Project, and also less than significant.

Biological Resources

Under the Reduced Acreage Alternative, potential impacts to special-status species during construction and to migratory birds during operation and maintenance of the Project, would remain, although be marginally lessened by the smaller size of the facility. Mitigation Measures **BIO-1** through **BIO-4** would be required. Impacts would be less than significant, similar to the Project.

Cultural Resources

Under the Reduced Acreage Alternative, potential impacts to cultural resources during ground disturbance for construction, would remain, although be lessened by the smaller size of the facility and associated ground disturbance. Mitigation Measures **CUL-1** through **CUL-4** would be required. Impacts would be less than significant, similar to the Project.

Energy

Compared to the Project, the Reduced Acreage Alternative would result in less surface disturbance and reduced construction and decommissioning activities, which would require less consumption of fuel resources. However, the capacity of the solar facility would also be reduced, causing a lower production of emissions-free energy generation. Overall, the Reduced Acreage Alternative would result in no significant impacts to energy; impacts would be the same as those identified for the Project.

Geology, Soils, and Paleontology

The Reduced Acreage Alternative would result in less surface disturbance. However, a potential significant impact could result if paleontological resources are encountered and inadvertently destroyed during ground disturbing activities. Accordingly, the implementation of Mitigation Measures **GEO-1** and **GEO-2** would be required for the Reduced Acreage Alternative. Because existing regulatory requirements including the Construction General Permit and the California Building Code would still apply to this alternative and because Mitigation Measures **GEO-1** and **GEO-2** would reduce this Alternative's potential significant impact of damaging significant paleontological resources, the potential impacts related to geology, soils, and paleontological resources would be less than significant and similar to the Project.

Greenhouse Gas Emissions

Under the Reduced Acreage Alternative, the electricity generating capacity would be reduced as compared to the Project. In addition, the Reduced Acreage Alternative would entail less reduction in carbon sequestration and construction and decommissioning emissions. The land not developed would continue in its existing use as rangeland, and occasionally dry-farmed. Overall, the Reduced Acreage Alternative would result in a reduction in generated GHG emissions relative to the Project due to its smaller size. Similar to the Project, the Reduced Acreage Alternative would have less than significant impacts related to generation of GHG emissions and conflicts with plans, policies, or regulations adopted for the purpose of reducing GHG emissions. However, the reduced generating capacity of the Reduced Acreage Alternative would have a reduced

overall benefit in terms of GHG emissions from replacing reliance on fossil-fuel sources with renewable energy.

Hazards and Hazardous Materials

Compared to the Project, the Reduced Acreage Alternative would consist of less construction disturbance, and a reduction in the number of solar panels, battery enclosures, and associated infrastructure. The NPDES Construction General Permit and other existing regulatory requirements would still apply to this alternative to reduce potential impacts to less than significant. Overall, there would be a reduction in the amount of hazardous materials required for construction and operation, although the use of hazardous materials during operation under the Project would be minimal. While smaller quantities of hazardous materials would be used, the impacts of the Reduced Acreage Alternative would be similar to those of the Project.

Hydrology and Water Quality

The Reduced Acreage Alternative would result in less surface disturbance and reduced construction and decommissioning activities. The NPDES Construction General Permit and other existing regulatory requirements would still apply to this alternative to reduce potential impacts to less than significant. Though slightly reduced, overall, the Reduced Acreage Alternative would result in less than significant impacts to hydrology and water quality, similar to the Project.

Land Use and Planning

The Reduced Acreage Alternative would include solar facilities on most of the same parcels as the Project, with a reduced footprint and output capacity, such that this alternative would also not physically divide an established community and would not conflict with any applicable land use plan designed to mitigate environmental effects. Similar to the Project, the Reduced Acreage Alternative would have no impact to Land Use and Planning.

Mineral Resources

The Reduced Acreage Alternative would include solar facilities on most of the same parcels as the Project, with a reduced footprint and output capacity, such that this alternative would also have no impact on Mineral Resources.

Noise

Under the Reduced Acreage Alternative, the substation and BESS would be located further from Noise Sensitive Area (NSA) 5, reducing noise at that location. While the reduced footprint of the Project site would decrease the noise impact of the solar generating facility during Project operation slightly, impacts would remain less than significant, similar to the impact of the proposed Project.

Population and Housing

The Reduced Acreage Alternative would reduce the acreage of disturbance and the output capacity, compared to the Project, thereby requiring a slightly smaller workforce or a slightly shorter construction period during construction and decommissioning. Operations would be expected to include the same number of workers as the Project. The Reduced Acreage Alternative is not expected to induce population growth directly or indirectly, and would have a

less than significant impact, similar to the Project. The Reduced Acreage Alternative would result in no impact relating to the displacement of people or existing housing.

Public Services

The Reduced Project Alternative would result in a minimally lower, if any, demand for fire and emergency services, police, schools, parks, and other public services due to reduced construction and decommissioning activities and would result in no impacts to Public Services, the same as the Project.

Recreation

The Reduced Project Alternative would result in a minimally smaller workforce and is not anticipated to increase demand on regional or local parks or require expansion or addition of recreational facilities. Similar to the Project, this alternative would have no impact on Recreation.

Transportation

The Reduced Project Alternative would result in a minimally smaller workforce during construction and the same workforce during operations and would impact the same roads as the Project. Similar to the Project, this alternative would have a less than significant impact on Transportation.

Tribal Cultural Resources

Potential impacts to tribal cultural resources during ground disturbance for construction, would remain, although be lessened by the smaller size of the facility. Mitigation Measures **CUL-1** through **CUL-4** would be required. Impacts would be less than significant after mitigation, similar to the Project.

Utilities

The Reduced Acreage Alternative would entail a small degree less surface disturbance, require less water to manage construction dust, and result in the generation of less sanitary and solid waste. There would be no conflict with solid waste reduction statutes or regulations. The Reduced Acreage Alternative would therefore have similar but slightly reduced impacts related to Utilities.

Wildfire

The Reduced Acreage Alternative would consist of less construction disturbance, and a reduction in the number of solar panels and associated infrastructure to be constructed. As a result, there would be a minor reduction in the potential for ignition risks on-site during Project construction and decommissioning. The potential for ignition risks on-site during the operation and maintenance phase would likely be the same as for the Project. The impacts of the Reduced Acreage Alternative would be slightly reduced, although similar in nature and less than significant, the same as the Project.

Conclusion and Relationship to Project Objectives

The Reduced Project Alternative would have a smaller site boundary than the proposed Project (about 628 acres compared to 1,024 acres). Therefore, the area experiencing environmental impacts would be slightly smaller than the proposed Project. Nevertheless, most impacts under the Reduced Project Alternative would be substantially similar to those expected under the Project.

The Reduced Acreage Alternative would not meet the Project Objectives to generate 80 MW of electricity at the POI in a cost-effective manner (Project Objective 1), would not be economically viable to develop or commercially financeable (Project Objective 4) due to its reduced capacity, and it would generate less economic benefits to the County (Project Objective 7). It would be feasible, but not an efficient use of a site with low agricultural productivity.

5.6 NORTHEAST SITE ALTERNATIVE

The Northeast Site Alternative would relocate the Project to the Northeast Site, which consists of 15 contiguous parcels totaling approximately 917 acres and is located approximately 5 miles northeast of the Project site, on the north side of Highway 20 and just west of Williams. See Figure 5-2. It is anticipated that the same amount of acreage would be used for solar and ancillary facilities as the Project (768 acres) in order to maximize the capacity to generate electricity. However, due to the anticipated set-aside areas for giant garter snake (*Thamnophis gigas*) and the 100-year floodplain along the existing agricultural canals, solar arrays would be required to be distributed throughout the site rather than concentrated in a single area. The scattered distribution of solar arrays would result in less efficient production of electricity and a significant decrease in capacity compared to the Project's 80 MW. The Northeast Site Alternative was selected for analysis because of past diligence undertaken when looking to originally site a potential project. It should be noted that the proponent does not have the Northeast Site under site control and there is no certainty that it could do so.

5.6.1 Impact Analysis

Aesthetics

The Northeast Site Alternative site size is approximately 107 acres smaller than the Project site; however, it is anticipated that the same amount of acreage would be used for solar and ancillary facilities (768 acres) in order to maximize the capacity to generate electricity. Compared to the Project site, the Northeast Site Alternative is much closer to the urbanized community of Williams, local roadways, and I-5, potentially increasing its visibility. Aesthetic impacts of the Northeast Site Alternative site would potentially be greater than the aesthetic impacts of the Project.

Agriculture/Forestry

Under the Northeast Site Alternative, a Williamson Act contract cancellation would not be required. However, use of this alternative site would convert prime agricultural land to another use, such that the impact on conversion of farmland would be significant and greater than the Project.

Air Quality

The Northeast Site Alternative site size is approximately 107 acres smaller than the Project site; however, it is anticipated that the same amount of acreage would be used. Ground disturbance area, number of vehicles, and heavy equipment use would be the same as the Project, therefore, air quality impacts would be similar to the Project and also less than significant.

Biological Resources

Potential impacts to biological resources would result from development of the Northeast Site Alternative. Because the rice fields within the Northeast Site Alternative includes potential habitat for the giant garter snake (*Thamnophis gigas*) (Stantec 2018), a federal and state threatened species, impacts would be similar to the Project or greater.

Cultural Resources

The Northeast Site Alternative site size is approximately 107 acres smaller than the Project site; however, it is anticipated that the same amount of acreage would be used. Potential impacts to cultural resources during ground disturbance for construction, would be similar to the Project impacts. It is unknown whether there are archaeological or historical resources on the Northeast Site Alternative site and Mitigation Measures **CUL-1** through **CUL-4** would be required to reduce the potential impacts due to inadvertent discoveries. Impacts would be similar to the Project or greater.

Energy

Under the Northeast Site Alternative, solar project-related development would occur on approximately the same amount of acreage as the Project such that surface disturbance and construction and decommissioning activities would require approximately the same fuel resources as the Project. Overall, the Northeast Site Alternative would result in no significant impacts to energy; impacts would be the same as those identified for the Project.

Geology, Soils, and Paleontology

Under the Northeast Site Alternative, the solar project-related development would occur on approximately the same amount of acreage as the Project. Compared to the Project, the Northeast Site Alternative would result in similar surface disturbance and construction and decommissioning activities, and a potential significant impact could result if paleontological resources are encountered and inadvertently destroyed during ground disturbing activities. Accordingly, the implementation of Mitigation Measures **GEO-1** and **GEO-2** would be required for the Northeast Site Alternative. Because existing regulatory requirements including the Construction General Permit and the California Building Code would still apply to this alternative and because Mitigation Measures **GEO-1** and **GEO-2** would reduce this Alternative's potential significant impact of damaging significant paleontological resources, the potential impacts related to geology, soils, and paleontological resources would be less than significant and similar to the Project.

Greenhouse Gas Emissions

Under the Northeast Site Alternative, the solar project-related development would occur on approximately the same amount of acreage as the Project, such that this alternative would result in approximately the same construction and decommissioning emissions as the Project. Similar to the Project, the Northeast Site Alternative would have less than significant impacts related to generation of GHG emissions and conflicts with plans, policies, or regulations adopted for the purpose of reducing GHG emissions.

Hazards and Hazardous Materials

Compared to the Project, the Northeast Site Alternative would consist of approximately the same construction disturbance, and an equivalent number of solar panels, battery enclosures, and associated infrastructure. The NPDES Construction General Permit and other existing regulatory requirements would still apply to this alternative to reduce potential impacts to less than significant. The use of hazardous materials during operation under the Project would be minimal and the Northeast Site Alternative would have the similar use of hazardous materials.

Hydrology and Water Quality

Under the Northeast Site Alternative, solar project-related development would occur on approximately the same amount of acreage as the Project, such that the Northeast Site Alternative would result in approximately the same amount of surface disturbance during construction and decommissioning activities. The 100-year floodplain within the alternative site would be avoided, requiring a less consolidated arrangement of solar arrays. Water needs during construction and operation would be the same as the Project, with water extracted from the Colusa Sub-Basin, similar to the Project. The NPDES Construction General Permit and other existing regulatory requirements would still apply to this alternative to reduce potential impacts to less than significant, similar to the Project.

Land Use and Planning

The Northeast Site Alternative would include solar facilities on agricultural land with approximately the same amount of acreage and output capacity as the Project, such that this alternative would also not physically divide an established community and would not conflict with any applicable land use plan designed to mitigate environmental effects. Similar to the Project, the Reduced Acreage Alternative would have no impact to Land Use and Planning.

Mineral Resources

The Northeast Site Alternative does not occur in an area that is delineated as a locally important mineral resource (DOC 2000), such that this alternative would also have no impact on Mineral Resources, similar to the Project.

Noise

The Northeast Site Alternative is much closer to the urbanized community of Williams and depending on the siting of the substation and BESS, its impacts on noise sensitive receptors could be the same or greater than the Project. With the implementation of mitigation measures, it is anticipated that the noise impacts of the Northeast Site Alternative could be reduced to less than significant, similar to the Project.

Population and Housing

The Northeast Site Alternative would require a similar workforce and duration of construction for construction and decommissioning and operations. The Northeast Site Alternative is not expected to induce population growth directly or indirectly, and would have a less than significant impact, similar to the Project. Like the Project, the Northeast Site Alternative would be located on agricultural land and would result in no impact relating to the displacement of people or existing housing.

Public Services

The Northeast Site Alternative would result in an approximate equivalent, if any, demand for fire and emergency services, police, schools, parks, and other public services as the Project, such that this alternative would also result in no impacts to Public Services.

Recreation

The Northeast Site Alternative would require a similar workforce and is not anticipated to increase demand on regional or local parks or require expansion or addition of recreational facilities. Similar to the Project, this alternative would have no impact on Recreation.

Transportation

The same workforce and the same number of vehicle trips would be required for the Northeast Site Alternative as for the Project. The Northeast Site Alternative is located adjacent to the urbanized community of Williams, such that traffic impacts may be greater or equivalent to the Project.

Tribal Cultural Resources

The Northeast Site Alternative site size is approximately 107 acres smaller than the Project site; however, it is anticipated that the same amount of acreage would be used. Potential impacts to tribal cultural resources during ground disturbance for construction, would potentially occur. It is unknown whether there are tribal cultural resources on the Northeast Site Alternative site and Mitigation Measures **CUL-1** through **CUL-4** would be required to reduce the potential impacts due to inadvertent discoveries. Impacts would be similar to the Project or greater.

Utilities

The Northeast Site Alternative would entail equivalent surface disturbance, water to manage construction dust, and result in the same generation of sanitary and solid waste as the Project. There would be no conflict with solid waste reduction statutes or regulations. The Northeast Site Alternative would therefore have the same impacts related to Utilities as the Project.

Wildfire

The Northeast Site Alternative would develop approximately the same amount of acreage as the Project. As a result, there would be the same potential for ignition risks on-site during Project construction and decommissioning. The potential for ignition risks on-site during the operation and maintenance phase would also be the same for the Project once the site was converted from irrigated agriculture to another use. The impacts of the Northeast Site Alternative to Wildfire would be the same as the Project.

Conclusion and Relationship to Project Objectives

The Northeast Site Alternative would disturb a similar amount of acreage compared to the proposed Project. Therefore, impacts associated with ground disturbance would be similar to the proposed Project. Impacts to agriculture would be significant and greater than the proposed Project, due to its occurrence on prime farmland. Biological impacts would also be expected to be increased due to the presence of potential habitat for the giant garter snake (*Thamnophis gigas*), a federal and state threatened species. This Northeast Site Alternative would achieve most of the objectives of

the proposed Project. However, the impacts to develop the Northeast Site Alternative to achieve those objectives would be increased compared to the Project.

5.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines define the environmentally superior alternative as that alternative with the least adverse impacts to the project area and its surrounding environment. The No Project Alternative is considered the environmentally superior alternative for CEQA purposes because it would not create any of the localized impacts of the Project, even though it would have less beneficial impacts than that of the Project on energy and GHG emissions. The No Project Alternative would fail to meet the basic objectives of the Project, including, but not limited to: establishing a PV solar power-generating facility of a sufficient size and configuration to produce up to 80 MW of electricity; assisting California utilities in meeting their obligations under California's RPS Program and SB 100; assisting California utilities in meeting their obligations under CPUC's Energy Storage Framework and Design Program; providing for the economically viable, commercial financeable, and environmentally beneficial use of the site's water-limited agricultural capacity; developing a site in proximity to transmission infrastructure in order to minimize environmental impacts; and, facilitating grid integration of intermittent and variable PV solar generation and minimizing line losses associated with off-site storage by collocating battery storage at the PV solar facility site.

Because the environmentally superior alternative is the No Project Alternative, the EIR also must identify an environmentally superior alternative from among the other alternatives. The County preliminarily has identified the Project as the environmentally superior alternative because of the beneficial effects of energy production and reduced GHGs associated with the greater amount of reliable, renewable energy that would be produced by the Project compared to the other alternatives. County decision-makers may weigh the relative benefits of the alternatives differently could identify another alternative as preferred and environmentally superior.

5.8 REFERENCES

California Department of Conservation (DOC). 2000. California Surface Mining and Reclamation Policies and Procedures, Guidelines for Classification and Designation of Mineral Lands. Accessed February 2021.

Kandt, A, E. Hotchkiss, A. Walker, J. Buddenborg, and J. Lindberg, 2011. *Implementing Solar PV Projects on Historic Buildings and in Historic Districts*. National Renewable Energy Laboratory, U.S. Department of Energy, Golden, CO.

National Park Service. 2021. Solar Technology. https://www.nps.gov/tps/standards/rehabilitation/guidelines/solar-technology.htm. Accessed July 2021.

Stantec. 2018. *A White Paper on the life history and potential project impacts on the giant garter snake from solar project development in rice fields in the California Central Valley*. April 23.

6 LIST OF PREPARERS

6.1 COLUSA COUNTY (LEAD AGENCY)

Gregory Plucker, Planning Director
Kent Johanns, Associate Planner

6.2 TETRA TECH (TECHNICAL ASSISTANCE)

Jennifer Merrick, Project Manager
Elizabeth Bradley, Deputy Project Manager
Paula Fell, Aesthetics
Michael Tynan, Aesthetics
Jessica Taylor, Agriculture and Forestry Resources
Paula Fell, Agriculture and Forestry Resources
Jeff Harrington, Air Quality
Tiffanie Ramos, Air Quality
Lysa Modica, Air Quality
Michelle Bates, Biological Resources
Amy Noddings, Biological Resources
Daniel Berg, Biological Resources
Jenna Farrell, Cultural Resources
Elizabeth Bradley, Energy
Jennifer Merrick, Energy
Derrick Coleman, Geology and Soil Resources
Jay Neuhaus, Geology and Soil Resources
Jeff Harrington, Greenhouse Gases
Tiffanie Ramos, Greenhouse Gases
Lysa Modica, Greenhouse Gases
Kian Liew, Hazards and Hazardous Materials
Carl Lenker, Hazards and Hazardous Materials
Ken Berard, Hydrology and Water Quality
Jay Neuhaus, Hydrology and Water Quality
Elizabeth Bradley, Land Use and Planning
Elizabeth Bradley, Mineral Resources
Jay Neuhaus, Mineral Resources
Kevin Fowler, Noise
Chris Hulik, Noise
Elizabeth Bradley, Public Services, Population and Housing, and Recreation
Jennifer Merrick, Public Services, Population and Housing, and Recreation
Perry Patton, Transportation
Eric Mathers, Transportation
Jenna Farrell, Tribal and Cultural Resources
Ken Berard, Utilities
Jennifer Merrick, Utilities
Elizabeth Bradley, Wildfire

Jennifer Merrick, Wildfire
DeeAnna Garcia, Word Processor/Editor
Jake Engelman, Mapping/Graphics
Sierra Marrs, Mapping/Graphics