DRAFT
ENVIRONMENTAL IMPACT REPORT
JANUS SOLAR AND BATTERY STORAGE PROJECT

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

State Clearinghouse No. 2024061043

September 27, 2024

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. 2024061043) 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 886-acre site, owned by a private landowner in unincorporated western Colusa County. To avoid environmental constraints, an estimated 666 acres of the 866-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 Sections 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 solar PV power generation and BESS facility, including supporting infrastructure, 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 California Public Utilities Commission (CPUC) Energy Storage Framework and Design Program.
4. Establish an environmentally beneficial and economically viable use of the Project site in light of its limited access to water.
5. Develop a solar PV power generation and BESS facility in proximity to established electrica infrastructure in order to minimize environmental impacts and efficiently interconnect to the electrical grid; and
6. Facilitate cost-effective grid integration of intermittent and variable solar PV generation and minimize line losses associated with off-site storage by co-locating a BESS with the solar PV generation facility at the Project site.
7. Develop a solar PV power generation and BESS 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 666 acres of the 886-acre Project site for a solar PV generating facility. The Project would generate 80 MW_{AC} of renewable energy and would include up to 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 of the Project is expected to begin by mid-2025 and last approximately 11 months, reaching commercial operations by the summer of 2026.

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.
- **Solar Only:** The Solar Only Alternative would build an 80 MW solar PV facility without an onsite BESS.
- **Undergrounded Gen-Tie Line:** The gen-tie line would be placed underground rather than traversing overhead to the PG&E Cortina Substation.
- **Northeast Site Alternative:** An alternate site which consists of 15 contiguous parcels totaling approximately 917 acres and 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
Aesthetics		
IMPACT 4.1-1: Would the project have substantial adverse effect on a scenic vista?	No Impact	No mitigation required.
IMPACT 4.1-2: 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 4.1-3: 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 4.1-4: 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.
Agriculture and Forestry Resources		
IMPACT 4.2-1: 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 4.2-2: Would the Project conflict with existing zoning for agricultural use, or a Williamson Act contract?	Less than Significant Impact	No mitigation required
IMPACT 4.2-3: 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 4.2-4: Result in loss of forest land or conversion of forest land to non-forest use?	No Impact	No mitigation required.

Potential Impacts	Level of Significance	Mitigation Measures
IMPACT 4.2-5: 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 4.3-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?	Less than Significant Impact with Mitigation Incorporated	**AQ-1: 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 4.3-2: 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 with Mitigation Incorporated	**AQ-2: Dust Control Measures** During construction of the Project, the primary construction contractor shall implement the following practices, which should limit daily dust emissions to well below the BCAQMD threshold of significance, and minimize impacts to surrounding areas, including adjacent orchards: • 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 off site, 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. • Apply dust suppressant in accordance with the manufacturer's application rate to Spring Valley Road, the unpaved road accessing the Project site, at least sixty (60) days and fifteen (15) before the start of construction and during the construction period, and as needed to reduce dust associated with truck traffic. • Curtail construction activities when the County's Air Quality Index exceeds 150. • Vehicle travel distances and total traffic on roads at the Project site and accessing the Project site shall be minimized through efficient

Potential Impacts	Level of Significance	Mitigation Measures
		planning and management. Special consideration must be given to minimizing the travel distances of heavy or heavily laden vehicles, particularly during the construction period. • During anticipated peak truck trip periods of heavy equipment and vendor deliveries, a traffic control flagger shall be present on Spring Valley Road. The traffic flagger shall enforce the 15-mile-per-hour speed limit for heavy vehicles on unpaved roads and shall monitor and log dust conditions, per the requirements outlined below. • Signage will be placed on Spring Valley Road describing the 15 mile per hour speed limit for heavy vehicles. • The construction contractor is the designated dust control site coordinator and is responsible for implementing dust control. It is the dust control site coordinator's responsibility to: o Read and understand applicable mitigation measures and have them available at the job site. o Implement the mitigation measures and ensure that all employees, workers, and subcontractors know their dust control responsibilities. o Use contingency control measures when primary controls are ineffective. o Monitor the worksite for compliance with the dust control mitigation measures. o Maintain a daily log monitoring the implementation and effectiveness of the control measures, including off-site emissions due to material transport and other activities. • Each day during construction, the construction contractor shall keep a daily log of dust conditions that includes the following information: o Date o Time o Wind speed o Temperature o Minutes off-site visible emissions were observed darker than 20 percent opacity, including date, time, location, and work activity o Soil conditions (damp, dry, etc.)

Potential Impacts	Level of Significance	Mitigation Measures
		○ Corrective actions taken, if needed **AQ-3: Long Term Dust Control** Once a year during Project operations, generally in late spring, the Applicant shall be responsible for the application of dust suppressant to Spring Valley Road, the unpaved road accessing the Project site. The dust suppressant shall be applied on Spring Valley Road from the intersection with Walnut Drive to the entrance to the Project site. The timing of the application and the rate of application shall be pursuant to the manufacturer's application rate and requirements and shall be to the satisfaction of the Public Works Director.
IMPACT 4.3-3: Would the project expose sensitive receptors to substantial pollutant concentrations?	Less than Significant Impact with Mitigation Incorporated	Implementation of **AQ-1** would be required.
IMPACT 4.3-4: 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
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** **Crotch's Bumble Bee** Prior to ground disturbing or vegetation removal and management activities within the Project site, a CBB avoidance plan will be prepared and submitted to CDFW for review. This plan will include specific avoidance measures that will be implemented to avoid take of the species. These measures are anticipated to include but not be limited to pre-construction surveys for CBB individuals and nests, avoidance of vegetation removal to the extent feasible during the CBB colony active period, procedures for vegetation management in coordination with mitigation measure **FIRE-1**, and implementation of avoidance buffers around CBB individuals and nests if they are observed. If it is ultimately determined that avoidance of CBB is not feasible, then the Project will seek an Incidental Take Permit from CDFW. **Burrowing Owl** Pre-construction surveys shall be performed no less than 14 days prior to the initiation of ground-disturbing activities (e.g., vegetation clearing or grading). A qualified biologist shall conduct pre-construction surveys in all suitable habitat areas in the Project site and 150 meters around the

Potential Impacts	Level of Significance	Mitigation Measures
		Project site (access permitting). Areas that have been plowed within 12 months prior to the start of ground-disturbing activities are not considered suitable habitat. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise, or begin 2 hours before sunset and continue until 1 hour after sunset (3 hours total). A minimum of two surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted, and their locations will be mapped. If the work activity halts for a period of 14 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. As defined in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012), buffer size is dependent upon time of year and level of disturbance at the Project site. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW. The BUOW survey can be conducted in conjunction with a nesting bird survey (required under the Migratory Bird Treaty Act), if timing is appropriate. **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 and a 0.5-mile buffer. 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 14 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

Potential Impacts	Level of Significance	Mitigation Measures
		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 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 CBB, burrowing owl, Swainson's hawk, American badger, western spadefoot, foothill yellow-legged frog, giant garter snake, 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**, 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.

Potential Impacts	Level of Significance	Mitigation Measures
		• Any sensitive habitats 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 their vicinity. • 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, coyote (*Canis latrans*), and feral dogs. • Workers shall be prohibited from bringing pets to the Project site and from feeding wildlife in the vicinity.

Potential Impacts	Level of Significance	Mitigation Measures
		• 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 Project 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 14 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., 300 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 in consultation with CDFW.
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	No Impact	No mitigation required.

Potential Impacts	Level of Significance	Mitigation Measures
not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		
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.
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). The Applicant shall make reasonable efforts to notify and involve members from existing tribes in the area such as, but not limited to, the Yocha Dehe Wintun Nation, the Cortina Rancheria Kletsel Dehe Band of Wintun Indians, and the Cachil Dehe Band of Wintun Indians of the Colusa Indian Community, in the worker education awareness program to provide additional perspective on the

Potential Impacts	Level of Significance	Mitigation Measures
		tribal resources in the region. The training will follow protocols such as the Patwin Cultural Protection and Preservation Plan. **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.

Potential Impacts	Level of Significance	Mitigation Measures
		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 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 (mitigation measure **CUL-2**) that will include 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 the construction of the Project. The report will be submitted to the County and the NWIC.
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?	Less than Significant Impact	No mitigation required.

Potential Impacts	Level of Significance	Mitigation Measures
Refer to Division of Mines and Geology Special Publication 42. ii) Strong seismic ground shaking? iii) Seismic-related ground failure, including liquefaction? iv) Landslides?		
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.
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

Potential Impacts	Level of Significance	Mitigation Measures
		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.
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.

Potential Impacts	Level of Significance	Mitigation Measures
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 with Mitigation Incorporated	Implementation of mitigation measure **FIRE-1** would be 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.
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,	No Impact	No mitigation required.

Potential Impacts	Level of Significance	Mitigation Measures
policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?		
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: • Use temporary noise walls that provide 10 to 15 dB of reduction so that construction noise does not exceed 86 dBA at the Project boundary; • 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; • Schedule construction activity during normal working hours on weekdays when higher sound levels are typically present and are found acceptable. Some limited on-site activities may be allowed provided that the standards of Table 1 of Chapter 13-6 of the County Code at the property line are not exceeded; • 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;

Potential Impacts	Level of Significance	Mitigation Measures
		• Limit possible evening shift work to low noise activities such as welding, wire pulling, and other similar activities, together with appropriate material handling equipment provided that the standards of Table 1 of Chapter 13-6 of the County Code at the property line are not exceeded; and • Prior to construction, a single point of contact shall be identified and their contact information shall be provided to the County and adjacent property owners who shall receive all construction related complaints, including but not limited to noise, dust, and traffic. A single point of contact shall be assigned at all times during and after construction and shall be responsible for investigating and responding to all complaints.
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?	Less than Significant Impact	No mitigation required.

Potential Impacts	Level of Significance	Mitigation Measures
iii) Schools? iv) Parks? v) Other public facilities?		
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 with Mitigation Incorporated	**TRANS-1: Road Inspection and Repairs** Prior to construction activities beginning and building permit issuance, the Applicant shall conduct a pre-Project inspection of the construction access routes approved by the Colusa County Public Works Director. This inspection shall document through photographs and/or video the conditions of said access routes, shall be conducted with County Public Works staff, and following the completion of the pre-Project inspection documentation shall be submitted to the Public Works Director. Following completion of the construction activities, the Applicant shall conduct a post-Project inspection of the construction access routes approved by the Colusa County Public Works Director. This inspection shall document through photographs and/or video the conditions of said access routes, shall be conducted with County Public Works staff, and following the completion of the post-Project inspection documentation shall be submitted to the Public Works Director. Damage to streets to the extent determined to have been caused by Project construction traffic shall be repaired to the satisfaction of the Public Works Director. The pre-Project and post-Project inspection requirements detailed herein shall also be performed just before and immediately after project

Potential Impacts	Level of Significance	Mitigation Measures
		decommissioning to address any road damage as a result of decommissioning construction traffic.
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 with Mitigation Incorporated	**TRANS-2: Construction Warning Signs** Prior to construction activities commencing, the Applicant shall contact Caltrans and the Colusa County Public Works Department to determine any appropriate locations for construction warning signs along Highway 20 and along County Roads. The placement of such signage shall be subject to Caltrans and the Public Works Department's specifications. The results of these determinations shall be submitted to the Colusa County Community Development Director for review and approval prior to construction commencing.
IMPACT 4.17-4: Would the project result in inadequate emergency access?	Less than Significant Impact	No mitigation required.
TRIBAL CULTURAL 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 the CEQA lead agency, has considered the significance of the resource to a California Native American tribe.	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
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?	Less than Significant 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 with Mitigation Incorporated	**FIRE-1: Wildfire Protection Measures** • **Vegetation Management and Wildfire Prevention Plan**. Prior to building permit issuance, a Vegetation Management and Wildfire Prevention Plan shall be submitted to the Williams Fire Protection Authority and the County for review and approval. This Vegetation Management and Wildfire Prevention Plan shall detail implementation measures to control and maintain the vegetation throughout the Project site to eliminate wildland fire hazards to a

Potential Impacts	Level of Significance	Mitigation Measures
		level determined satisfactory by the Williams Fire Protection Authority Fire Chief. Implementation measures shall include three Fuel Modification Zones: ○ Zone 1: Non-combustible, pervious surface (gravel, DG, or similar). ▪ 0-30 feet from BESS and Substation. ▪ Zone 1 will be free of vegetation and all combustible materials. Zone 1 will occur surrounding the onsite BESS facility and substation. This Zone will be created to 30 feet from all electrical equipment and battery storage systems. ○ Zone 2: Grass maintained at stubble height (~ 2 inches). ▪ 0-20 feet from the Project's perimeter. ▪ Zone 2 will consist of mowed grass to stubble height within 20 feet of the Project's perimeter edge. It is expected that mowing will occur late spring prior to fire season as directed by the Williams Fire Authority and will continue as necessary to maintain the Zone 2 grass at stubble height. ○ Zone 3: Grass maintained at 4 inches in height. ▪ 0-20 feet from all PV arrays, 30-100 feet from BESS and Substation ▪ Zone 3 will result in the mowing of grasses to 4 inches in height within 20 feet of PV arrays and within 30-70 feet from the BESS and Substation to reduce wildfire behavior in the Project site's grasslands to an acceptable level. It is expected that mowing will occur late spring prior to fire season as directed by the Williams Fire Authority and will continue as necessary to maintain the Zone 3 grass to a mowed height of 4 inches or less. No vegetation management will be conducted within Crotch's bumble bee avoidance areas. Vegetation management shall be implemented through mechanical cutting (mowing and trimming). The Vegetation Management and Wildfire Prevention Plan shall require installation and proper maintenance of access roads/fire breaks throughout the Project site, regularly conducting inspections of the Project components, properly storing flammable materials, requiring that UL Listed Portable Fire

Potential Impacts	Level of Significance	Mitigation Measures
		Extinguishers of the appropriate type be located throughout the Project site, and/or the installation of sprinkler heads where determined necessary. • **Emergency Services Response Plan.** Prior to any building permit issuance, an ESRP shall be submitted to the Williams Fire Protection Authority and the County for review and approval. This ESRP shall adequately describe the Project design and layout according to as-built drawings, and detail specific fire suppression and protection measures that will be implemented in the entire facility, including the BESS, to eliminate fire hazards, as well as detailed information about the emergency response strategy so that first responders are well equipped to effectively respond to a call for service, if there were any. The ESRP will also take into account recommendations provided by the BESS supplier. The ESRP will also include defined roles and responsibilities. Measures could include but would not be limited to, coordination and communication procedures with the fire department and other first responders, shutdown procedures, site personnel training, identification of evacuation routes, traffic control, and maintenance of Safety Data Sheets. The ESRP will be made to the satisfaction of and require approval from the Williams Fire Protection Authority Fire Chief. Such measures shall include but not be limited to the following: ○ On-site water storage shall include a 50,000-gallon water storage tank with hose and truck hook-ups connections compatible with responding fire apparatus. The source and supply for the water shall be clearly identified. ○ Battery container spacing shall be determined based on UL 9540A test data, manufacturer recommended separations, and potentially a heat flux analysis utilizing computational fluid dynamic modeling software. The computational fluid dynamic modeling shall be submitted for review and approval. ○ The battery containers shall receive a UL 9540 certification. If a UL 9540 certification cannot be provided, a Nationally Recognized Testing Laboratory, approved by the Williams Fire Protection Authority and qualified to conduct the field testing,

Potential Impacts	Level of Significance	Mitigation Measures
		shall conduct a field evaluation of one typical system utilizing the field evaluation procedures detailed by that testing laboratory, as approved by the Williams Fire Protection Authority. Upon passing the field test, the testing laboratory shall provide a label certifying that the system has been evaluated to UL 9540 standards and meets or exceeds these standards. The Project Owner is responsible for making any and all required changes to the battery storage units to obtain the UL 9540 certification or the testing equivalent to the satisfaction of the Williams Fire Protection Authority. Should the Project Owner place on the site more than one battery storage prior to obtaining approval of the Williams Fire Protection Authority of the UL 9540 certification or the testing equivalent, it does so at its own risks and no battery storage unit shall be connected, operational, and/or energized in any way until such certification approval is obtained and any required modifications have been made to the satisfaction of the Williams Fire Protection Authority. Should the test battery storage unit require being connected and/or energized to perform the field certification testing, the Williams Fire Protection Authority may approve said connection and/or energization based on its sole discretion subject to any additional requirements. • Compliance with all provisions of 2022 California Fire Code, Section 1207, including the preparation of a hazard mitigation analysis. • As part of the siting and design of the BESS, a setback of more than 500 feet shall be included to prevent Spring Valley Road from being closed to two-way through traffic in the event of an emergency response at the Project site. Prior to fire permit issuance, the setback and access shall be reviewed and approved by the WFPA Fire Chief. • In addition to what is included in the ESRP, the Applicant will be required to provide training on how to adequately respond to a fire event on the Project site to the WFPA. The Applicant may also provide appropriate training to and surrounding jurisdictions that may potentially respond to a call for service at the Project site.

Potential Impacts	Level of Significance	Mitigation Measures
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?	Less than Significant with Mitigation Incorporated	Implementation of mitigation measure **FIRE-1** would 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	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 June 24, 2024. 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 the California Native Plant Society, the California Department of Fish and Wildlife, the California Native American Heritage Commission, California Native Plant Society, Carpenters Local Union 46, the Central Valley Regional Water Quality Control Board, Defenders of Wildlife, Antoinette Marsh, Annamarie Louie, Matt Ferrini, Beth Ferrini Katsaris, Stephen Marsh, Karan Marsh, Vernette Marsh, Leslie Marsh and Jean Terklidsen. 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.

JANUS SOLAR AND BATTERY STORAGE PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT
TABLE OF CONTENTS

APPENDICES

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 potential environmental effects associated with their implementation. A project, as defined under CEQA, is an action subject to a public agency's funding or approval that has the potential to cause a direct or reasonably foreseeable indirect physical change to the environment.

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

One primary objective of CEQA is to enhance public participation in the planning process and to inform the public. During the environmental review process, CEQA provides several opportunities for the public to participate and provide input. Figure 1-1 below illustrates an example CEQA process and identifies generally when public and agency input is sought. Once completed, a Draft EIR is circulated to the public and relevant agencies for review and comment. The Lead Agency is required to respond to comments submitted during the Draft EIR comment period in the Final EIR. All of the information is then considered by the decision-makers prior to taking final action on a proposed project.

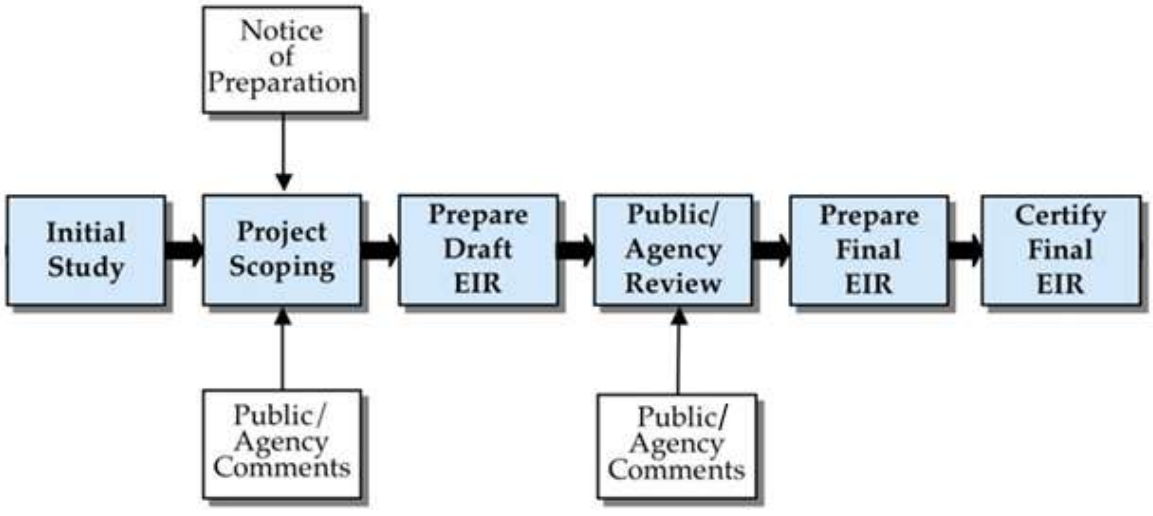


Figure 1-1. The Environmental Review Process

1.2 SCOPE OF THE ENVIRONMENTAL IMPACT REPORT

The required content and scope of an EIR are set forth in the CEQA statute and its implementing regulations, the "CEQA Guidelines" (California Code of Regulations, Sections 15000 through 15387). 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 impacts do not require further evaluation.

As the Lead Agency under CEQA, Colusa County completed a preliminary review of the proposed Janus Solar and Battery Storage Project (the "Project" or "proposed Project") and determined that due to the potential for significant environmental effects, an EIR must be prepared. This section provides a summary of the issues addressed in this Draft EIR for the proposed Project.

Based on the preliminary review, environmental effects that were determined to be either 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 less-than-significant levels are proposed whenever feasible and appropriate. In addition to the environmental issues identified above, this Draft EIR contains all sections required by the CEQA Guidelines, including a discussion of a reasonable

range of alternatives to the proposed Project, an evaluation of cumulative and other related projects, and growth-inducing effects of the proposed Project.

1.3 PUBLIC SCOPING PROCESS

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

- In accordance with the CEQA Guidelines, a Notice of Preparation (NOP) was prepared and submitted to the State Clearinghouse for distribution to responsible agencies, affected agencies, and other interested parties on June 25, 2024. The NOP review period was through July 31, 2024.
- Information requested and input provided during the public review period regarding the contents of the NOP and the scope of the EIR were incorporated in this Draft EIR (see Appendix A for the NOP comments).
- Responsible public agencies, as well as members of the public, were invited to attend a Public EIR Scoping Meeting on July 11, 2024, in the Colusa County Board of Supervisors Chambers. Comments pertaining to CEQA-related environmental impacts, as outlined by the CEQA Guidelines previously mentioned, were incorporated in this Draft EIR (see Appendix A for the Scoping Meeting comments).

The intent of the public scoping process is to identify areas of concern regarding the potential environmental effects of the proposed Project and identify a range of actions, alternatives, mitigation measures, and significant effects to be analyzed in depth in the EIR (California Code of Regulations, Section 15083). During the Project's public scoping process, comments were received from the following responsible public agencies:

- California Department of Fish and Wildlife,
- California Native Plant Society,
- Central Valley Regional Water Quality Control Board,
- Defenders of Wildlife, and
- Native American Heritage Commission,

and from the following community members:

- Antoinette Marsh,
- Stephen Marsh and Karan Marsh,
- Jean Terkildsen,
- Jean Terkildsen, Matt Ferrini, and Beth Ferrini Katsaris,
- Stephen Marsh, Karan Marsh, Annamarie Louie, Antoinette Marsh, Vernette Marsh, Leslie Marsh, and
- The Carpenters Local Union 46.

Comments received but not applicable to the proposed Project or within the scope of CEQA, as determined by the CEQA Guidelines, were not addressed in this Draft EIR. Comments related to CEQA, have been addressed in the following sections:

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Utilities
- Wildfire

In addition to the EIR scoping process, the County consulted with California Native American tribes 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 June 19, 2024, to the following tribes:

- Wayne Mitchum Jr., Chairman, The Colusa Indian Community Council
- Charlie Wright, Chairperson, Cortina Rancheria – Kletsel Dehe Band of Wintun Indians
- Tribal Historic Preservation Officer, 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
- Stephanie Reyes, Tribal Preservation Officer, Middletown Rancheria of Pomo Indians

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:

Executive Summary – Consistent with CEQA Guidelines, Section 15123, the Executive Summary chapter provides a summary of the proposed Project and discussion of a reasonable range of alternatives to the proposed Project; areas of controversy and issues to be resolved; and conclusions regarding growth inducement and cumulative impacts. A summary of potential impacts and recommended mitigation measures is also provided.

Chapter 1: Introduction – Describes the purpose and use of the Draft EIR, provides a brief overview of the proposed Project, and outlines the organization of the Draft EIR. Contains a discussion of issues required by CEQA that are not covered in other chapters.

Chapter 2: Project Description – Describes the environmental setting, proposed Project objectives, characteristics, land uses, and requested Project actions.

Chapter 3: *Introduction to the Alternatives* – Describes the alternatives to the proposed Project, including the "No-Project" alternative.

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

Chapter 5: Alternatives Analysis – Consistent with CEQA Guidelines, Section 15126.6, evaluates a reasonable range of alternatives to the proposed Project and the potential environmental effects of those alternatives.

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

Appendices – Provides technical studies and reports, and other relevant material, used in evaluating the potential impacts of the proposed Project and referenced in the Draft EIR.

1.5 GROWTH INDUCEMENT

Under CEQA Guidelines Section 15126.2(e), a project may be 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 population growth, or provides expansion of resources that lead to secondary growth.

With respect to employment, the proposed Project would require up to approximately 200 workers during construction; 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 to meet the Project's needs.[1] Following construction, the Project would require up to 5 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. Decommissioning and site restoration activities are expected to require a smaller workforce than construction. 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; if all workers were to relocate to Colusa County, the existing available housing supply would not be able to accommodate the influx of workers during construction. Motels and hotels within Colusa and Williams, as well as the surrounding Glenn and Yolo counties, could accommodate the temporary workers. Therefore, the Project is not expected to induce population

[1] The California Employment Development Department estimated that the annual average unemployment rate in Colusa County in December 2023 was approximately 15.8 percent (not seasonally adjusted) compared to the statewide unemployment rate of 4.7 percent (California Employment Development Department 2024).

growth, the housing and provision of services for which could result in the potential for significant adverse environmental impacts.

Although the Project would contribute to the state's energy supply, which can support growth, the development of power infrastructure is a response to increased or unmet 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.

2. PROJECT DESCRIPTION

2.1 Overview

Janus Solar PV, LLC (Applicant), a subsidiary of RWE Solar Development, LLC applied to the Colusa County Community Development Department for a Use Permit (UP) to construct, operate, maintain, and decommission a solar photovoltaic (PV) power generating facility, with a battery energy storage system (BESS) and associated facilities and infrastructure, to be known as the Janus Solar and Battery Storage Project (Project). Colusa County (County), as the CEQA Lead Agency, is preparing this Draft EIR (State Clearinghouse No. 2024061043) 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, *Introduction to the Alternatives*.

The Project would generate up to 80 megawatts of alternating current (MW_{AC})[1] of electricity and store up to 80 megawatts, or 320 megawatt hours (MWh), of electricity on an approximately 886-acre site owned by a private landowner in unincorporated western Colusa County. Only an estimated 666 acres of the approximately 886-acre site would be used for the Project. The proposed 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 Pacific Gas & Electric (PG&E) Cortina Substation.

2.1 Location

The Project is located approximately 6.5 miles southwest of the City of Williams. State Highway 20 runs about 1.5 miles from the Project site, north and west, as shown in Figure 2-1. The proposed Project would be located on two parcels totaling approximately 886 acres of private property currently used for cattle grazing in unincorporated Colusa County, California. The Project would connect to the electrical grid at the existing PG&E Cortina Substation, located on Walnut Drive approximately 3 miles northeast of the Project site (measured linearly). To enable interconnection, the Applicant would construct a new, approximately 4-mile-long 60 kilovolt (kV) generation intertie (gen-tie) line, partially located within existing County right-of-way (ROW) along Walnut Drive and Spring Valley Road, that would extend from the Project site to the point of interconnection (POI) at the PG&E Cortina Substation.

[1] PV panel capacity is generally 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, among other factors such as panel orientation and tracking technology.

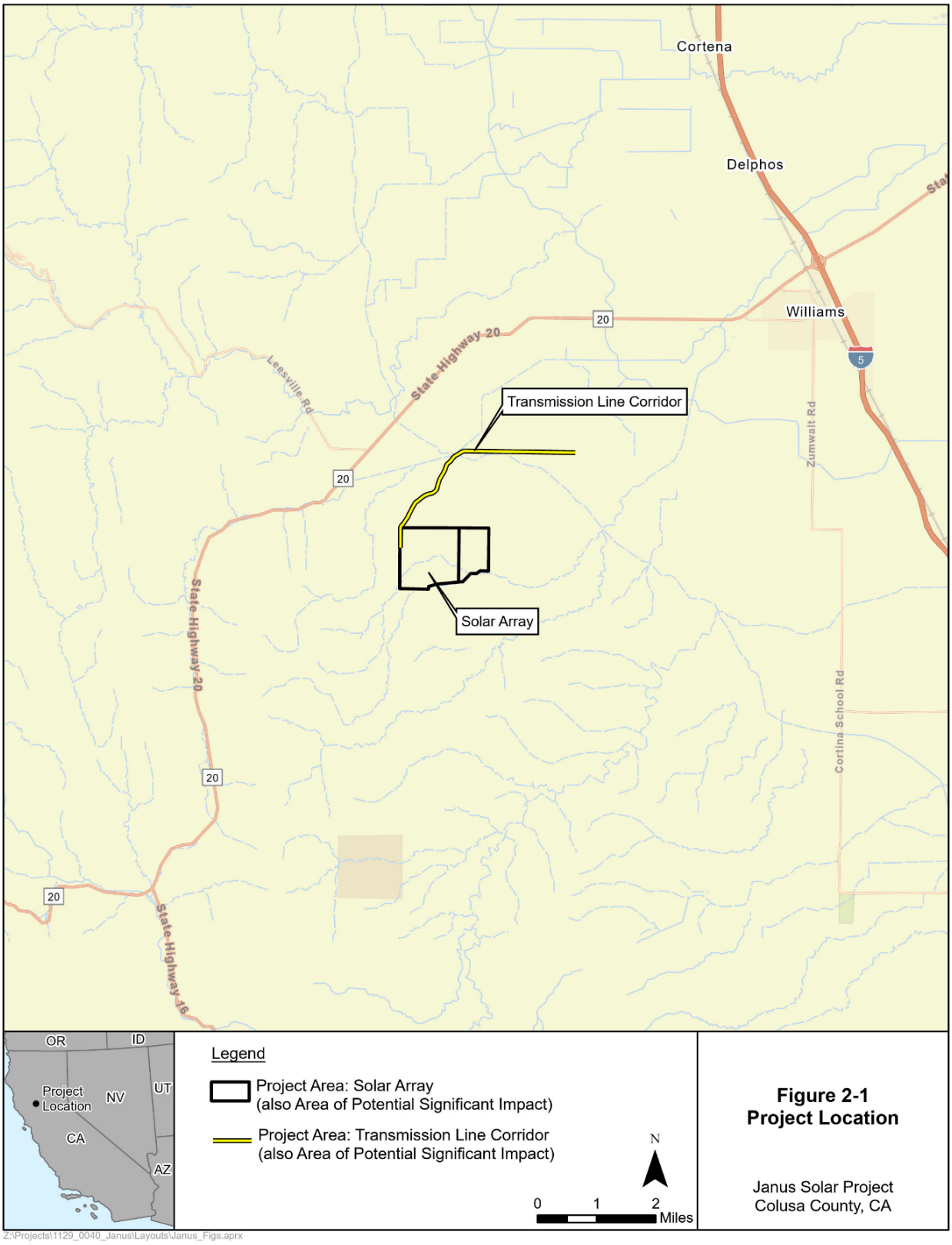


Figure 2-1. Project Location

2.2 Existing Setting

2.2.1 On-Site Land Uses

The Project site consists of rangeland designated as Agriculture Upland (AU) in the Colusa County General Plan and zoned Foothill Agriculture (F-A) by Colusa County. The gen-tie line intersects land designated as AU and Agriculture General (AG) and zoned as F-A and Exclusive Agriculture (E-A). The Project site is designated Farmland of Local Importance by the California Department of Conservation. However, the Project site is not designated Prime or Unique Farmland it is not irrigated and has historically been used for dry-land cattle grazing.

2.2.2 Surrounding Land Uses

The land use designation for adjacent parcels is AU. Nearby properties are currently being used for cattle grazing, agriculture, and open space. There are four residences in proximity to the Project site that are not owned by the Project site landowner. One residence is approximately 100 feet south of the Project site, near the Project's southwest corner, and another is located further south, more than 1,000 feet from the Project's southern boundary. There is another residence located northwest of the Project, also more than 1,000 feet from the Project's northwest corner. The fourth residence is approximately 430 feet south of the proposed gen-tie line, along Walnut Road. The residences in the Project site's northwest corner, and across Spring Valley Road, are owned by the Project site landowner (see Figure 2-2).

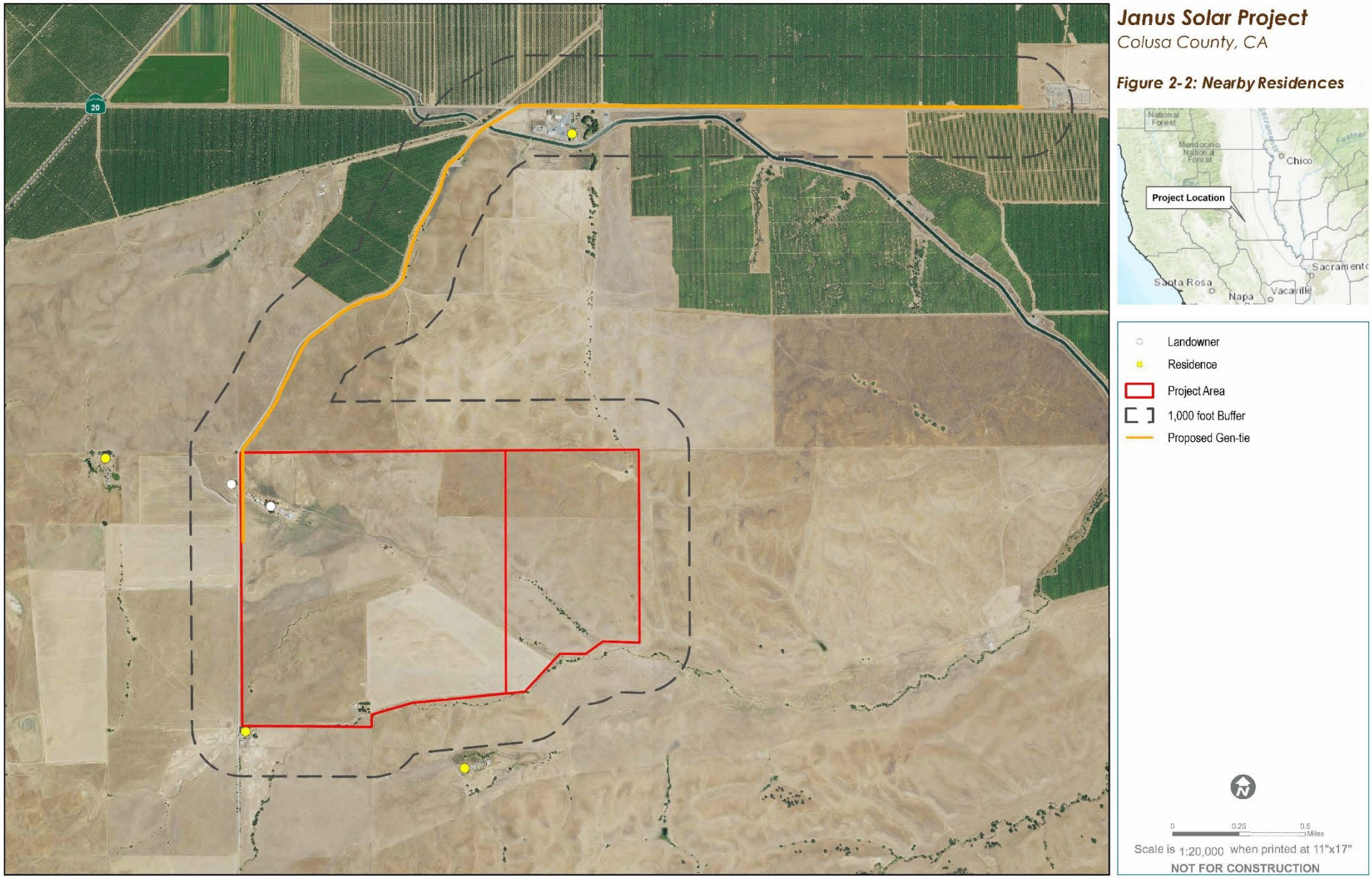


Figure 2-2. Nearby Residences

2.3 Project Objectives

The Applicant has identified the following Project Objectives:

1. Establish a solar PV power generation and BESS facility, including supporting infrastructure, 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 California Public Utilities Commission (CPUC) Energy Storage Framework and Design Program.
4. Establish an environmentally beneficial and economically viable use of the Project site in light of its limited access to water.
5. Develop a solar PV power generation and BESS facility in proximity to established electrical infrastructure to minimize environmental impacts and efficiently interconnect to the electrical grid; and
6. Facilitate cost-effective grid integration of intermittent and variable solar PV generation and minimize line losses associated with off-site storage by co-locating a BESS with the solar PV generation facility at the Project site.
7. Develop a solar PV power generation and BESS 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 Description of the Project

The Project consists of three major components: a solar PV power generation facility (Solar Facility), the BESS, and the gen-tie line (Figure 2-3). 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. See Section 2.5.1 for details about the proposed Solar Facility. Approximately 4 acres of the Project 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 2.5.2 for details about the proposed BESS. The on-site substation would connect to the existing PG&E Cortina Substation via an approximately 4-mile-long, 60 kV gen-tie line. See Section 2.5.3 for details about the gen-tie line that would connect the Project to the electrical grid. Other supporting infrastructure would include access roads, perimeter fences, telecommunications infrastructure, a meteorological data collection system, signage, lighting, stormwater facilities, and an operations and maintenance (O&M) building. See Section 2.5.4 for details about other supporting infrastructure.

2.4.1 Solar Facility

2.4.1.1 Solar PV Generating Components

The Solar Facility would consist of solar PV 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 2-4. 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 monocrystalline silicon, polycrystalline 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 an anti-reflection coating for 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, state, and federal 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

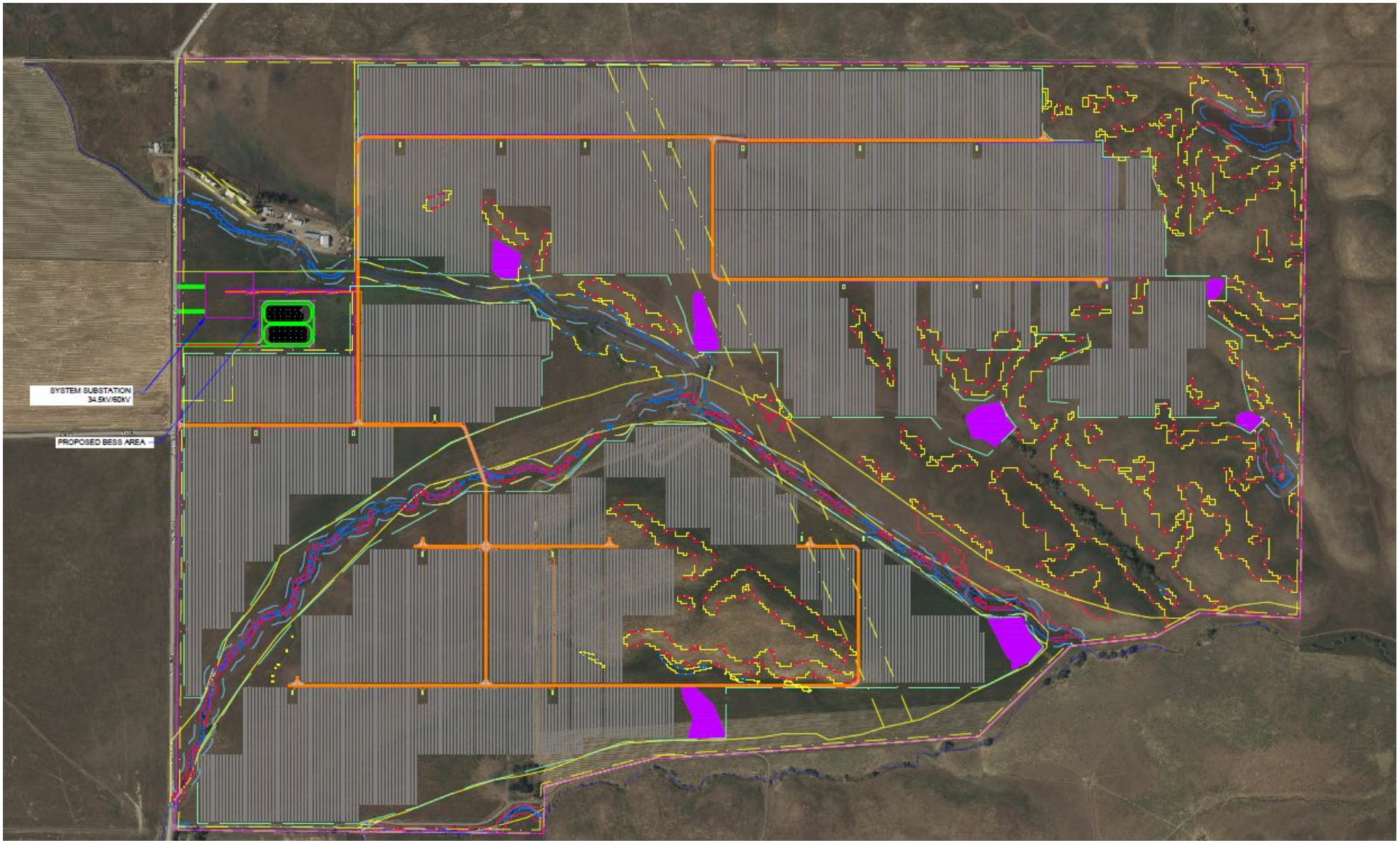
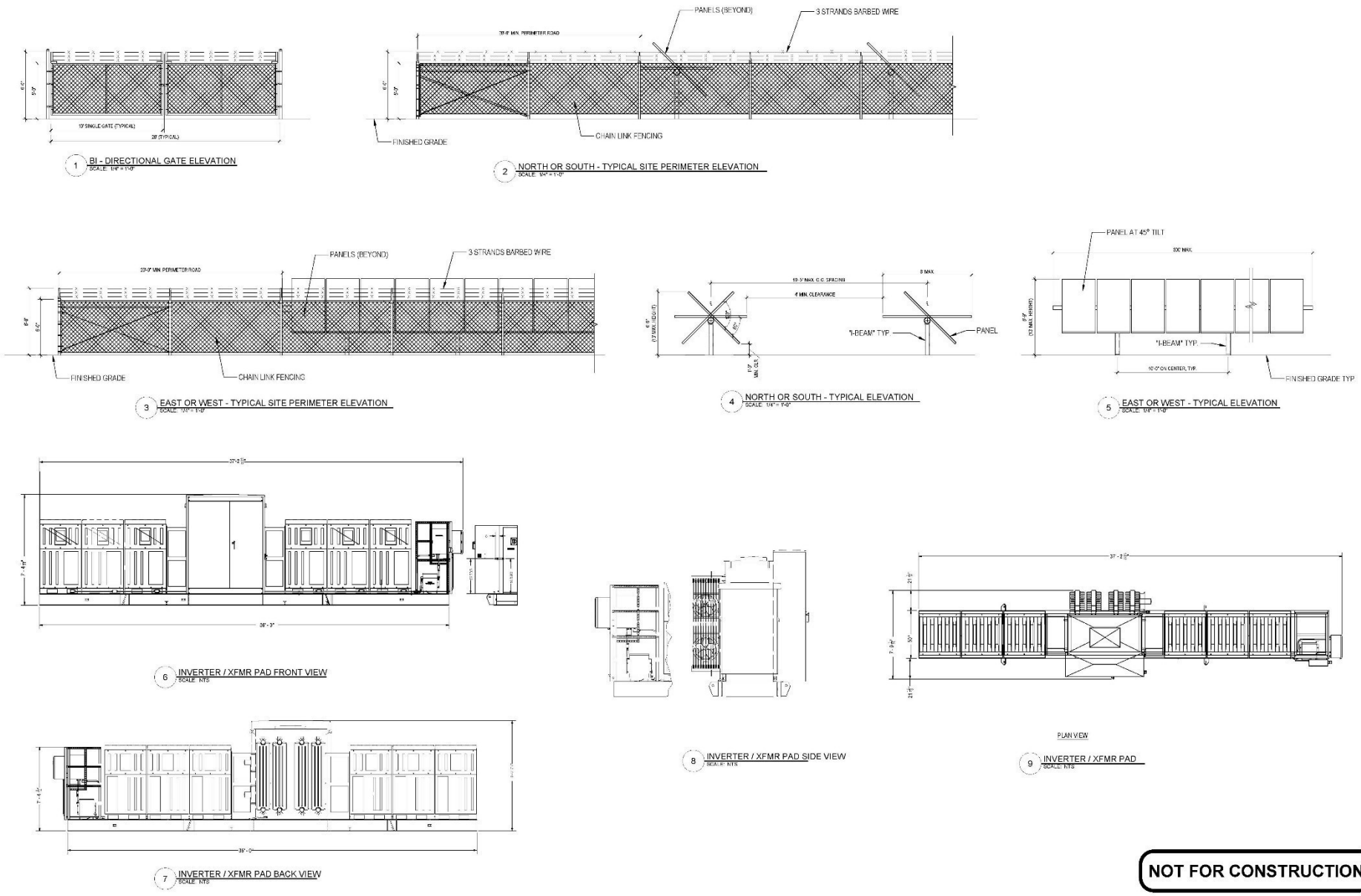


Figure 2-3 .Site Plan



NOT FOR CONSTRUCTION

Figure 2-4. Typical Elevations and Details

assembly to support and allow proper movement of the torque tube assembly.[2] 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. 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 2-4. 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.

2.4.1.2 On-Site Substation

A Project substation would be constructed in the northwest portion of the Project site. It 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 constructed on approximately 3 acres and include structures up to 80 feet in height. An emergency generator for use in the event that the regional transmission system fails would also be located 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 2-5 and 2-6.

[2] 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.

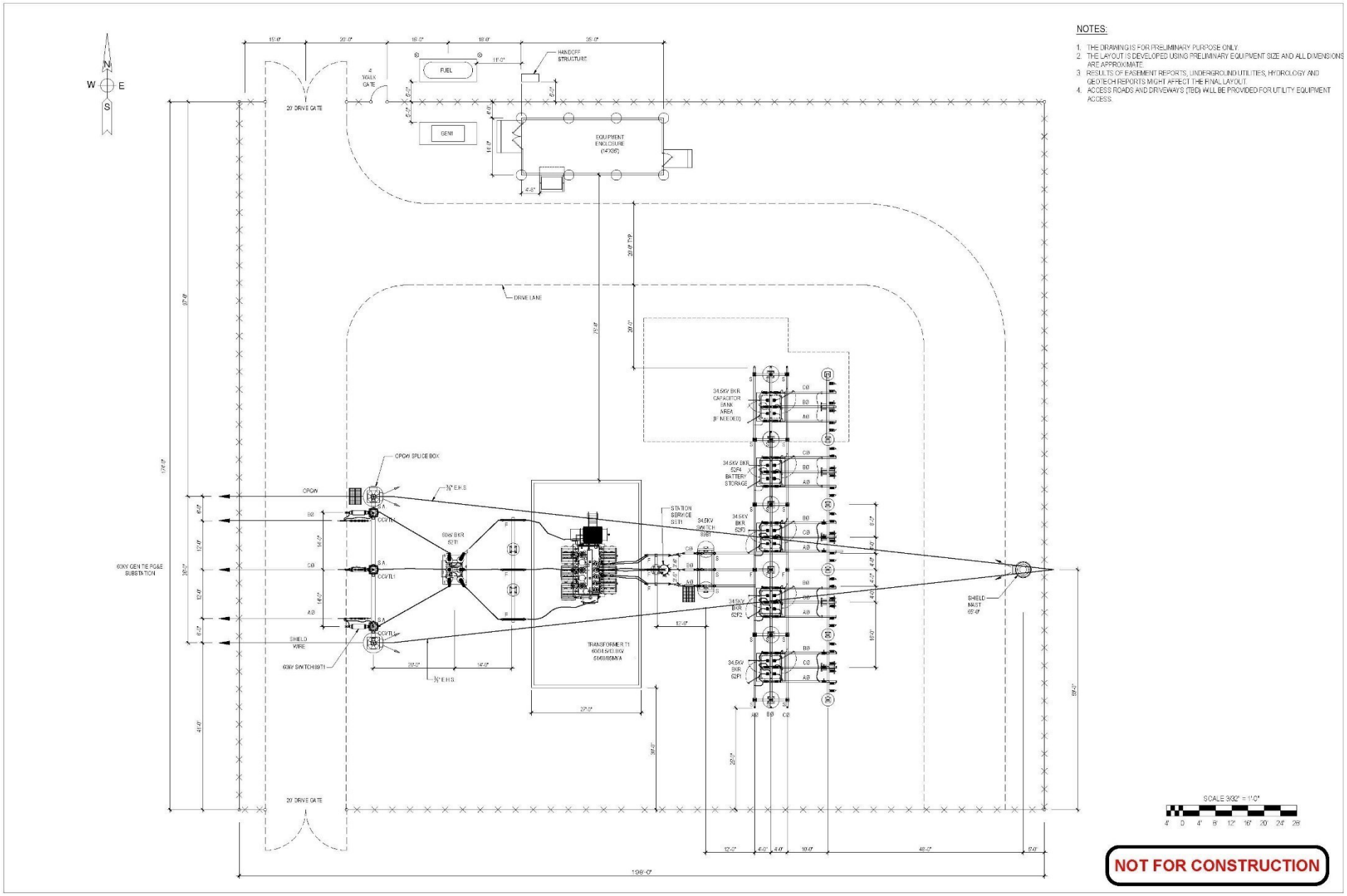


Figure 2-5 Substation General Arrangement

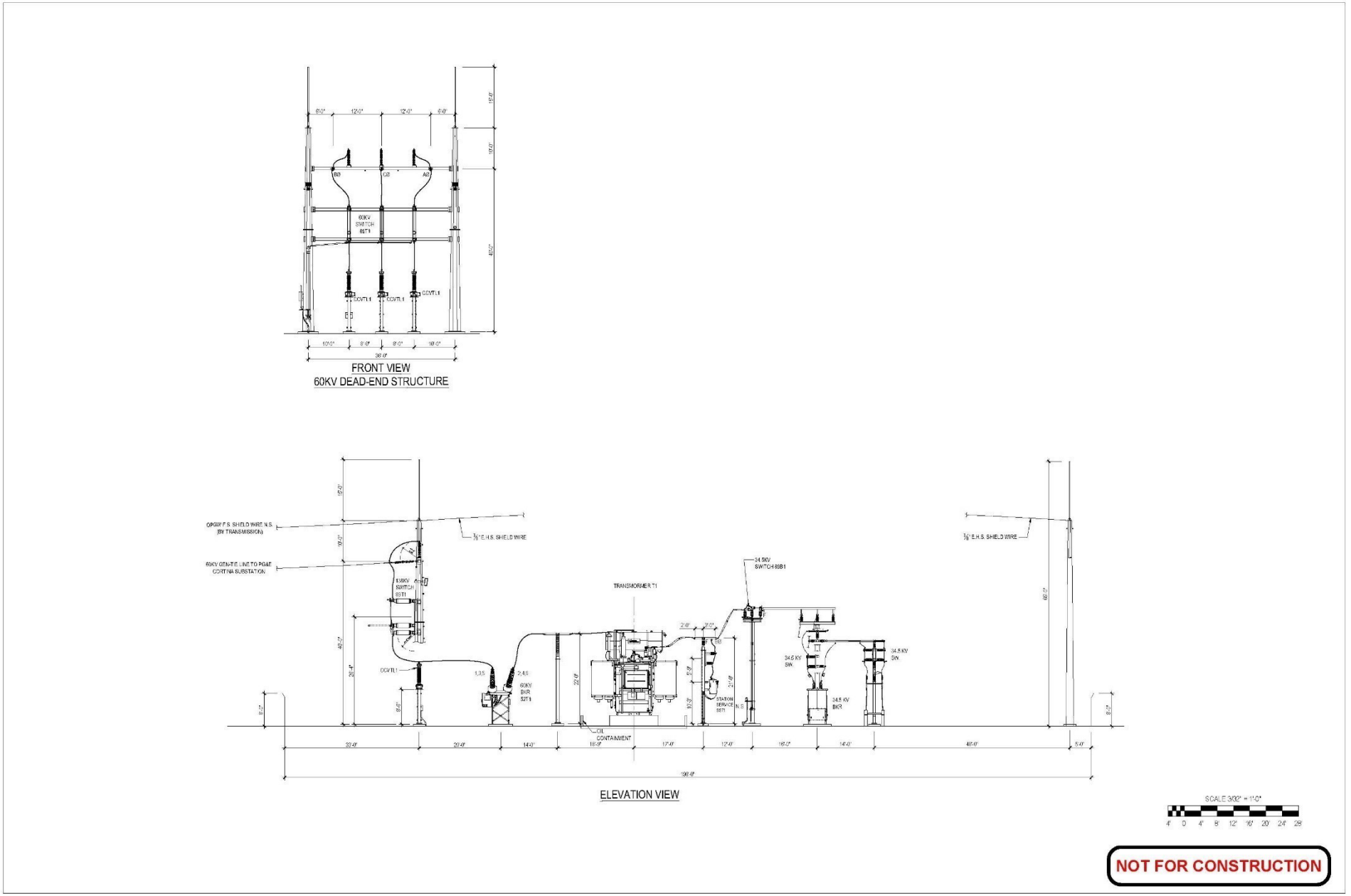


Figure 2-6. Substation Elevation

The substation would have access to communication systems in the area to comply with Federal Energy Regulatory Commission (FERC) and California Independent System Operator (CAISO) utility monitoring and control requirements. Compliance may be accomplished by underground lines, aboveground lines, or wirelessly.

2.4.2 BESS

The BESS is expected to be located adjacent to the on-site substation. Batteries would be contained within metal enclosures. Gravel would be placed on the surface of the BESS yard and in between each enclosure. The color of the metal enclosure may be dark gray, but typically varies by manufacturer and has not yet been determined. The maximum combined footprint for the BESS is approximately 4 acres. Key components of the BESS include batteries and battery storage system enclosures, as well as controllers, converters, inverters, and transformers. Figure 2-7 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 a 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.

Lithium-ion technology, with lithium iron phosphate (LFP) sub-chemistry, is proposed for the BESS, although alternative technologies or sub-chemistries may be considered given the continuing rapid technological change in the battery industry. Selection of the lithium-ion sub-chemistry for the Project has taken 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. The proposed BESS would be designed, constructed, operated, and maintained in accordance with existing federal, state, and local codes and 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 would shut down the unit if any hazard indicators were 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.

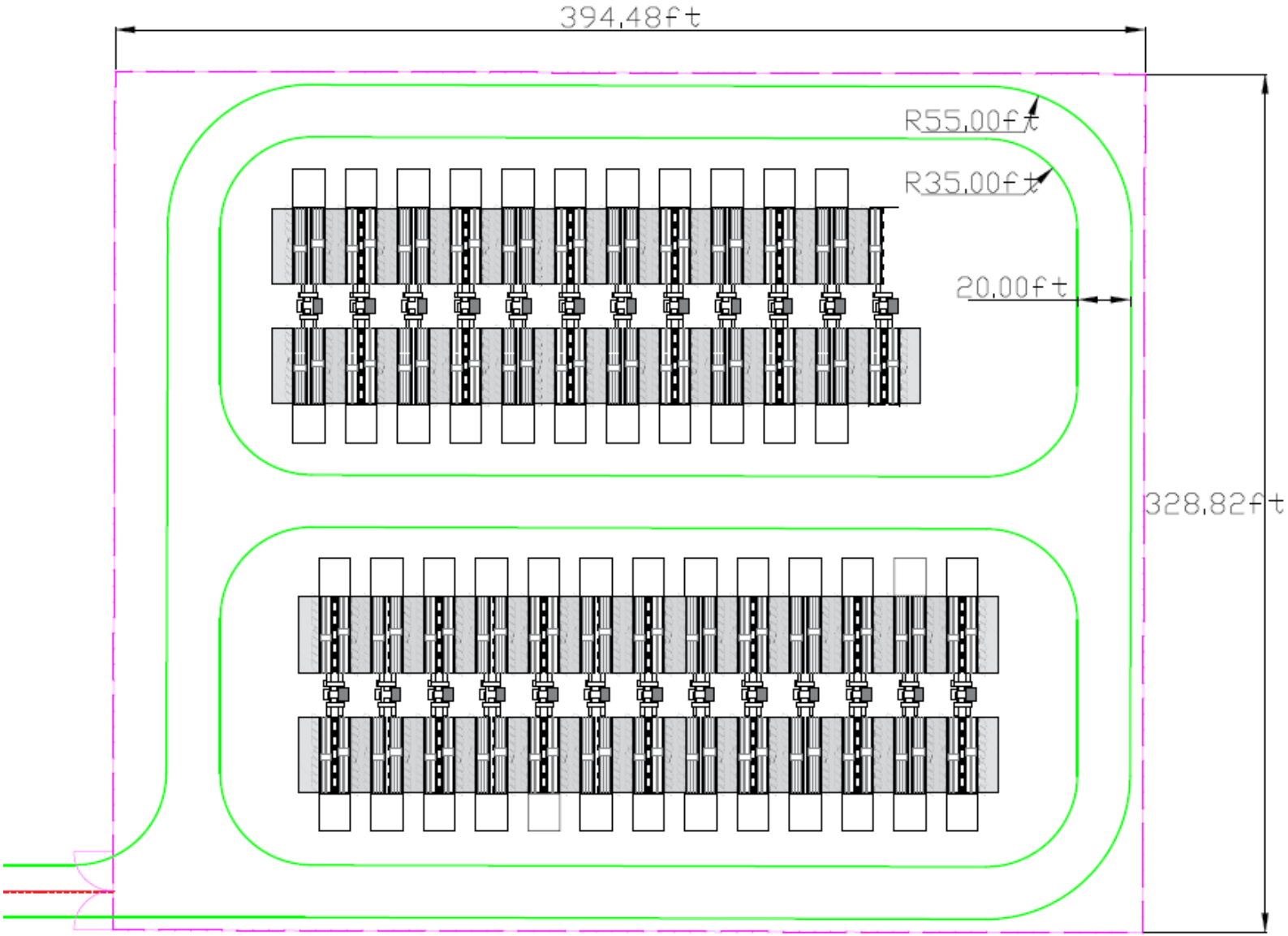


Figure 2-7. Energy Storage System Layout

2.4.3 Gen-Tie Line

Energy from the proposed solar arrays would be collected at the on-site substation and transmitted to the existing PG&E Cortina Substation. In order to interconnect the Project with the PG&E Cortina Substation, the Applicant would construct a new 60 kV gen-tie line that would originate from the northwest corner of the Project site at the on-site substation and extend approximately 2 miles within the County ROW along Spring Valley Road to reach Walnut Drive. At Walnut Drive, the gen-tie line will continue within the County ROW for approximately 2 miles along Walnut Drive to the POI at the PG&E Cortina Substation. Along this route, the gen-tie line would cross the Colusa-Tehama Canal, administered by the United States Bureau of Reclamation (USBR). The Applicant's gen-tie construction would terminate at the PG&E Cortina Substation property line. From their property line, PG&E would construct an approximately 1,000-foot-long span, continuing the gen-tie to the Project's bay within the existing footprint of the PG&E Cortina Substation. PG&E would be responsible for all improvements constructed within their property and are further described in Section 2.5.5, below.

2.4.4 Other Supporting Infrastructure

2.4.4.1 Operation and Maintenance Building

Operation and maintenance (O&M) activities would take place in an O&M facility located in the northwest portion of the Project site, co-located with the on-site substation and BESS. 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 building footprint would occupy an area of approximately 1 acre in size.

2.4.4.2 Stormwater Retention

The site's 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.

2.4.4.3 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.

2.4.4.4 Telecommunications Facilities

The Project would require a 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/or below ground, either attached to existing distribution lines or installed immediately adjacent to the Project substation. It is anticipated that the telecommunication routes would utilize the existing distribution lines along Spring Valley Road and Walnut Drive, or the new poles that would be constructed as part of the Project's gen-tie. Telecommunications may also be transmitted by a small wireless microwave antenna mounted on a pole up to 80 feet tall, which would be part of the Project substation.

2.4.4.5 Fencing, Lighting, and Signage

Existing barbed wire fencing would be replaced with metal fencing 6 to 8 feet in height along the site perimeter as needed. The substation would be surrounded by a metal fence topped with 1 foot of three-strand barbed wire to prevent unauthorized access and ensure the safety of the public. Three-rail fencing similar to the existing fencing along the perimeter of other properties in the area, may be utilized and required as a condition of approval in addition to the metal fencing along the perimeter of the Project to help maintain the visual character of the site.

Infrared security cameras, motion detectors, 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. 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.

2.4.4.6 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 and interior access roads would be a minimum of 20 feet wide per California Department of Forestry and Fire Protection (CAL FIRE) access standards as well as International Fire Code Standards and would meet the requirements of the Williams Fire Authority for emergency access. Access and perimeter roads would also serve as fire breaks and would be maintained as such, minimizing any combustible material along them that could support the growth of a ground or wildfire. Site access for emergency vehicles requires roads that will tolerate heavy-vehicle traffic and, therefore, would also be maintained accordingly.

2.4.5 PG&E Cortina Substation Improvements

As mentioned in Section 2.5.3, above, to accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project’s gen-tie line that would extend from the Project’s point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project’s bay within the existing footprint of the PG&E

Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

2.4.6 Water and Wastewater

2.4.6.1 Water

Construction

During construction, approximately 13,000,000 gallons of non-potable water (approximately 40 acre-feet [AF])[3] are anticipated to be required for dust suppression and other purposes. Water would be trucked to the site and would be sourced from the City of Williams Public Works Department. Per the City of Williams Public Works Department, prior to the start of construction, the Applicant would request that a hydrant and its associated meter be provided by the City of Williams for use by the Project and would pay for the water required according to the rate that is in place at the time of construction. This agreement would be included in a will-serve letter obtained by the Applicant as a Condition of Approval of the Project's CUP. While the exact location of the hydrant is yet to be determined, it is anticipated that the Project would use the hydrant located at the corner of J St and 7th St in the City of Williams. The final location would be determined by the City of Williams and would avoid any impacts to circulation. Based on discussions with the United States Bureau of Reclamation and the Glenn-Colusa Irrigation District, water is not available for the Project from the Tehama-Colusa or Glenn-Colusa canals. 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 solar PV 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.

[3] 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.

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

2.4.6.2 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.

2.4.7 Waste and Hazardous Materials

2.4.7.1 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. As discussed further in Section 4.9, Hazards and Hazardous Materials, 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. However, the PV module manufacturer would likely provide CdTe module collection and recycling services. Damaged panels would be disposed of in compliance with applicable requirements. Also discussed further in Section 4.9, Hazards and Hazardous Materials, the USEPA recommends that businesses consider managing Lithium-ion batteries under the federal “universal waste” regulations in 40 CFR Part 273. Universal waste regulations require that the waste be sent to a permitted hazardous waste disposal facility or a recycler. All batteries disposed of at the end of their useful life would be recycled or disposed of in accordance with the applicable hazardous waste requirements. Non-recyclable waste would be disposed of in a landfill.

2.4.7.2 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.

2.4.7.3 Other 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.

2.4.8 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.

2.4.8.1 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.

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 may 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.

2.4.8.2 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 site-specific geotechnical report.

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) may be used.

During construction, a variety of equipment and vehicles would operate on the Project site. All equipment and vehicles would comply with County noise standards.

On-Site Substation Construction
The on-site substation would be separately fenced to provide increased security around the medium- and high-voltage electrical equipment. The on-site 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 would first be backfilled, compacted, and leveled, and then an 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 on-site substation would have a control enclosure, 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 on-site substation.

O&M Area
O&M activities would take place in a new O&M facility located in the northwestern portion of the Project site. The driveway and parking area for the building would be compacted with native soil and/or road base aggregate.

2.4.8.3 BESS

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 at the BESS facility location. Each energy storage system would include power conditioning systems, electrical wiring, switching, and transformers and connect to the 34.5 kV bus in the on-site substation.

2.4.8.4 Gen-Tie Line Construction and Stringing

Interconnecting the Project with the existing PG&E 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 PG&E 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 would consist of a puller set-up positioned at one end and a tensioner set-up with a 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.

2.4.8.5 Construction Schedule and Workforce

Construction of the Project is anticipated to last approximately 11 months, beginning no sooner than July 2025 and ending upon the Project achieving commercial operation (COD) by June 2026. The analysis in this Draft EIR assumes that construction would occur during an 11-month period.

Hours

Construction would occur primarily during daylight hours, Mondays through Fridays 7:00 am to 7:00 pm, and potentially 8:00 am to 5:00 pm on Saturdays and Sundays. Construction may require limited nighttime activity for material and equipment delivery and/or where the schedule has been delayed due to weather or other events. Nighttime activities would . If nighttime work or work on weekends should be necessary, such work would require prior written approval from the County and would be performed in accordance with Colusa County requirements which may include but not be limited to the use of temporary lighting, which would be directed downward to minimize impacts to neighboring properties and wildlife in the Project vicinity.

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.

2.4.8.6 Construction Access, Traffic, and Equipment

Construction vehicles would access the Project site from Interstate 5 to Highway 20, 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 and interior roads would be a minimum of 20 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.

2.4.8.7 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. Construction activities would increase the potential for erosion or siltation and runoff at the Project site that could introduce contaminants and other pollution into surrounding waterways (see Section 4.10, Hydrology and Water Quality). 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 (BMPs) 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. The Project would also comply with Section 44.2-20.20 of the Colusa County Zoning Code which requires there to be no net increase in offsite drainage flows, including peak flows during a storm event.

2.4.9 Operation and Maintenance

Once constructed, the Project would operate seven days per week, 365 days per year. Approximately three to five, 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 operations. 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 2.5.6.

2.4.10 Decommissioning and Site Reclamation

The Project has an expected useful life of 35 years. It is expected to become operational in the summer of 2026 and to remain in operation through 2061. 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 2061 subject to further County review and approval. When 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 BESS 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.

2.4.11 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.

2.4.11.1 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.

2.4.11.2 Wildlife-Friendly Design Features

Fence posts would be capped to prevent the potential entrapment of birds or other small species. Further, the design of any 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.

2.4.11.3 Emergency Services Response Plan

An Emergency Services Response Plan (ESRP) would be prepared to train local emergency response personnel during the development and operation of the Project. 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 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 the temperature of the affected enclosure cools to ambient temperature.

The ESRP would be fully developed between the applicant and the Williams Fire Protection Authority (WFPA) before applying for an NPDES building permit and would include guidance on the necessary steps to be taken in case of an emergency response. These steps may include but are not limited to the following:

- **Site access considerations:** The ESRP will identify any and all access points to the Project site and provide first responders with instructions on how to access the on-site water tank and associated connection.

- **Remote and third-party monitoring:** In accordance with NFPA 72 standards, the BESS facility is monitored 24/7 by a NFPA 72 compliant certified third-party fire alarm monitoring company. In the event that an alarm is received, the alarm is routed to the 24/7 NFPA 72 compliant certified third-party fire alarm monitoring company.

- **Emergency Response Measures:** In the event that an emergency situation is identified, either through control panel notification, visual identification, or remote monitoring, the ESRP would outline general emergency response measures which shall include but not be limited to the following:

    - **Assessment and Notification:** The site manager would assess the situation and notify emergency services directly.

    - **Evacuation Measures** to be deployed upon identifying that the emergency response requires evacuation.

    - **Communication with Emergency Services:** the ESRP would outline the standard operating procedures for ensuring adequate communication with the site manager and Emergency Service Providers such as the WFPA.

- **Safety Perimeter:** A minimum safety perimeter of 100 feet would be established.

Drainage and Water Runoff: Water used during a fire would be used to cool adjacent structures as a precaution to ensure that fire would not spread to adjacent units. However, as detailed in the Hazard Mitigation Analysis, it is unlikely that a fire could spread between units even during the worst-case scenario. Runoff from the applied water would not contain contaminates as the units are waterproof and the gravel surface would allow the water to percolate into the ground.

- **Post-fire measures:** Firewatch after a fire or thermal event shall take place for a minimum of 48 hours. Hazards after a fire should be identified to ensure proper personal protective equipment (PPE) is available.

2.4.11.4 Vegetation Management and Wildfire Prevention Program

A Vegetation Management and Wildfire Prevention Program would be prepared in order to establish guidance and best practices for vegetation management and wildfire prevention for the Project while establishing the environmental requirements, processes, tools, and guidance required to be followed by personnel in charge of operating and maintaining the Project. The plan will be completed in accordance with existing state regulations as well as [NFPA 10 and the International Fire Code] in addition to Health and Safety standards established by the Project proponent. The contents of the Vegetation Management and Wildfire Prevention Program would comply with existing state regulations and include the following components:

- Wildfire behavior
- Vegetation Management Requirements
- Signage
- Road Conditions and Fire Breaks
- Record Keeping
- Firefighting Response

2.4.11.5 Williams Fire Protection Authority Agreement

The Applicant is subject to an agreement with the Williams Fire Protection Authority (WFPA) pursuant to which the Applicant agrees to make an annual contribution to WFPA for each year the Project is in operation for the general enhancement of WFPA services within its service area. The agreement further obligates the Applicant to coordinate with WFPA on the preparation of the Emergency Response Plan (described above and in Section 4.9, *Hazards and Hazardous Materials*, and a Vegetation Management and Wildland Fire Prevention Plan (described in Section 4.20, *Wildfire* and to provide training for first responders regarding implementation of the Emergency Response Plan and Vegetation Management and Wildland Fire Prevention Plan. The agreement is not for the purpose of funding (in whole or in part) the construction of any new facilities.

2.4.11.6 Park District Contributions

The Applicant proposes to make annual contributions to the Maxwell Parks and Recreation District, the Arbuckle Parks and Recreation District, and the City of Williams Parks and Recreation Department, subject to the Project's approval. The Applicant's proposals are gifts to the districts and to the department consistent with Public Resources Code section 5788.17 and Government Code section 37354, respectively, and require acceptance by each district or department's legislative body. As further described in Chapter 4.15, *Public Services*, the Project will have no impact to park facilities.

2.4.11.7 Public Services Contribution

The Applicant requested a Development Agreement (DA) from the County to vest its rights to develop the Project pursuant to corresponding provisions of the California Government Code and the County Code. As part of the DA, the Applicant would agree to deliver various public benefits to the County to ensure that the costs of public services are fully funded given that the majority of the components of the solar project are exempted from the inclusion in property taxes pursuant to State law Included in the draft DA is a requirement for the Applicant to make annual payments to the County's General Fund of $100,000 subject to adjustments for inflation during the course of the Project.

2.4.11.8 Access to Emergency Service Providers and First Responders

The Applicant would design the Project such that the BESS would be located more than 500 feet east of the Project boundary, past the proposed locations of the Project substation, O&M building, and parking area, and will have dedicated access and perimeter roads which will allow operations and maintenance personnel, as well as emergency responders to enter the Project site and avoid blocking vehicular access along Spring Valley. As outlined in the Project's Emergency Services Response Plan, emergency responders should keep a minimum distance of 100 feet from the BESS in the event of an emergency.

2.4.11.9 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 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.

2.5 Permits and Approvals

Permits and approvals that the Applicant has requested or that may be otherwise required to construct, operate and maintain, and decommission the Project include the following:

- Colusa County – Use Permit (UP); DA; franchise authorization to construct, operate, and maintain the gen-tie within the public ROW; action to address Williamson Act contract(s); encroachment permit for gen-tie construction; building permit(s) and other subsequent ministerial approvals.
- 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 PG&E 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
- Air Pollution Control District—Permit for operation of the on-site generator.

2.6 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 EIR utilizes 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 in Figure 2-8.

Table 2-1. Cumulative Projects

Cumulative Project	Location	Description
AYMIUM (fka 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.
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.
Saloon Energy Storage Project	5266 Beauchamp Drive, Colusa, California, 95987 on Colusa County Assessor's Parcel Number 016-290-053-000 and 016-290-009-000	The project would be up to an 81 MW BESS that would deliver and receive power from the Pacific Gas & Electric (PG&E) Cortina Substation. The energy would be transported to and from the project substation to the existing PG&E Cortina Substation through a proposed underground gen-tie line.
Sites Reservoir	PO Box 517. Maxwell, CA 95955	The Sites Reservoir Project would be a 1.5 million acre-foot offstream surface storage reservoir located in the Sacramento Valley west of the town of Maxwell. The proposed reservoir's conveyance facilities would include the use of existing Tehama Colusa Canal and Glenn-Colusa Irrigation District Canal diversion and conveyance facilities, plus a proposed new diversion and discharge pipeline. Operation of the proposed reservoir would be in cooperation with the operations of existing Central Valley Project (CVP) and State Water Project (SWP) system facilities.

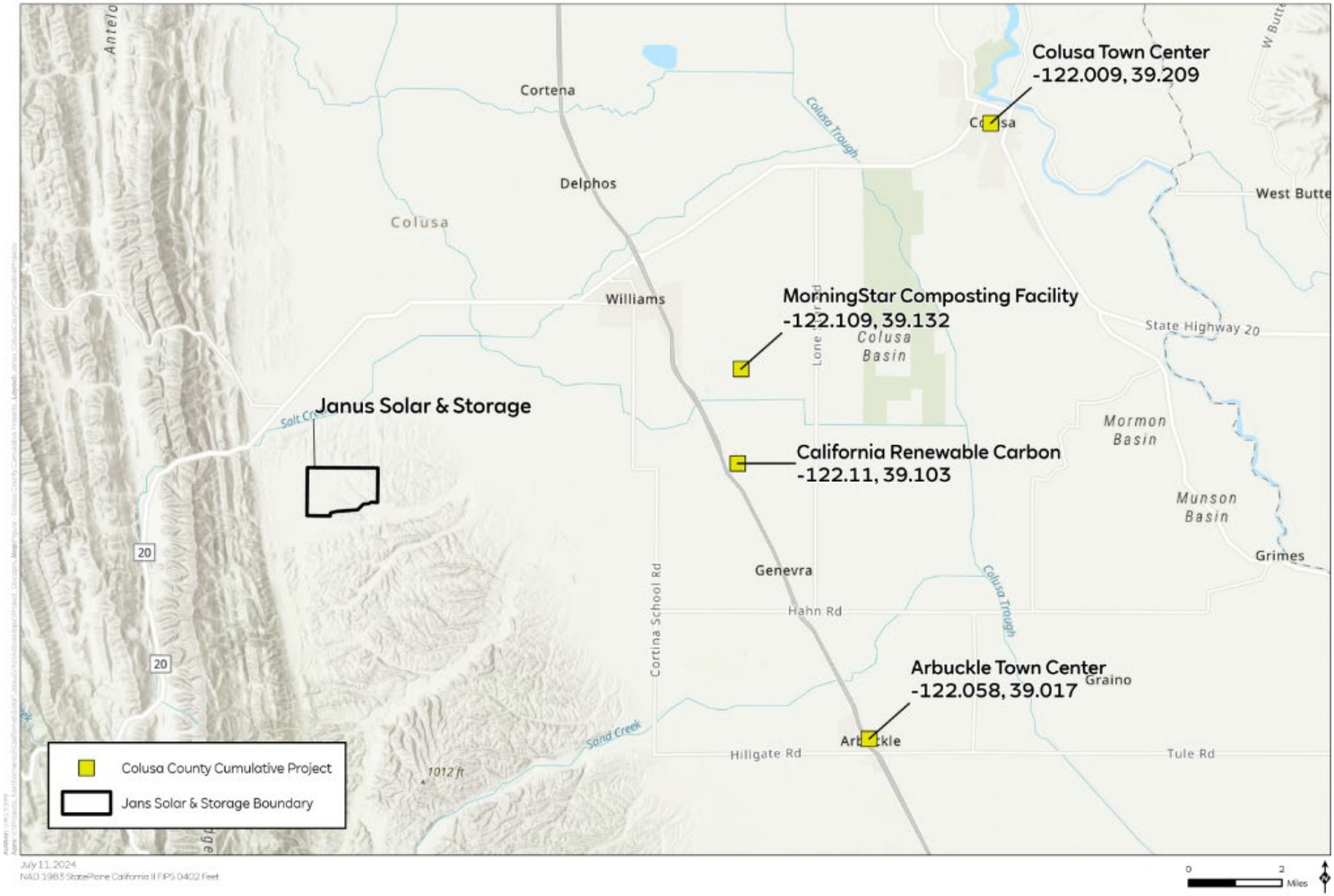


Figure 2-8. Cumulative Projects

3. INTRODUCTION TO THE ALTERNATIVES

3.1 PURPOSE OF THE PROJECT ALTERNATIVES

CEQA requires that an EIR describe a range of reasonable alternatives to the project, or to its location, 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 the reasons for dismissal, and analyzes remaining 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 to its location, that avoid or substantially lessen 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 considered 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 solar PV power generation and BESS facility, including supporting infrastructure, 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 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 the CPUC Energy Storage Framework and Design Program.
4. Establish an environmentally beneficial and economically viable use of the Project site in light of its limited access to water.
5. Develop a solar PV power generation and BESS facility in proximity to established electrical infrastructure in order to minimize environmental impacts and efficiently interconnect to the electrical grid; and
6. Facilitate cost-effective grid integration of intermittent and variable PV solar generation and minimize line losses associated with off-site storage by co-locating a BESS with the solar PV generation facility at the Project site.
7. Develop a solar PV power generation and BESS facility in Colusa County, which would support the economy by investing in the local community, creating local construction job opportunities, 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 proposed project. In addition, CEQA requires that the No Project alternative be evaluated and requires that an Alternative Site Location be considered when appropriate.

3.3.1 Reduced Acreage

A reduced acreage alternative was considered but was eliminated. The alternative would include a 300-foot buffer from Spring Valley Road which would reduce the buildable area by approximately 37 acres from 666 buildable acres to 629 acres.

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 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). For these reasons, the reduced acreage alternative was considered but eliminated. According to Section

15126.6(c) of the *CEQA Guidelines*, since this alternative did not meet the Project Objectives, this alternative can effectively be eliminated from further analysis and would not be required to be considered during the final project design.

3.3.2 Orchard

During the scoping period, an alternative to build an orchard rather than a solar and BESS facility was requested. This alternative was considered but eliminated. The Applicant is a renewable energy developer and does not construct projects for agricultural uses. Additionally, the site would be unable to support an orchard due to the lack of irrigation and connection to the Westside Water District. The landowners would need an annexation from the water district in order to divert water onto the site.

The environmental incentives under the Orchard alternative are purely speculative. Impacts would be greater to biological resources, cultural resources, and geology and soils. Ground disturbance would be significantly greater in order to till the soil and plant trees required for an orchard. Habitat loss for plants and wildlife would be significant. Potential cultural and paleontological resources may be destroyed. Additionally, the price for almonds and walnuts are currently low and would not provide similar economic resources to the County or the landowners.

The Orchard alternative would not meet any of the Project Objectives as it would not build a solar PV facility or allow for the benefits of such a facility. Therefore, the Orchard alternative was considered, but eliminated. According to Section 15126.6(c) of the CEQA Guidelines, since this alternative did not meet the Project Objects, this alternative can effectively be eliminated from further analysis and would not be required to be considered during the final project design.

3.3.3 Conservation and Demand Side Management

A conservation and demand side management alternative was considered, but ultimately rejected. 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 POI; would not assist California utilities in meeting their obligations under either California's RPS and SB 100; 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. 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 (CPUC 2008).

3.4 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

In addition to the mandatory No Project Alternative, an alternative that focused on distributed, rooftop solar throughout Colusa County; an alternative solely focused on solar PV energy (removing the BESS component from the Project); an alternative that undergrounds the gen-tie line; and an off-site alternative in northeastern Colusa County were considered to potentially lessen or avoid significant environmental effects resulting from implementation of the proposed Project. The alternatives described below were considered in this Draft EIR.

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 for consideration. The analysis of the No Project alternative assumes that the existing grazing use of the site 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, and wildlife habitat would not occur. Additionally, the environmental benefits of renewable energy generation would not be realized from solar development of the site.

Under the No Project alternative, all Project-related impacts would be avoided, there would be no new impacts to the environment other than those associated with continued grazing activity. No feasibility issues have been identified that 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. However, this alternative would not include energy storage, such as the BESS included in the proposed Project. 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 greater amount of rooftop acreage (666 acres or more of total rooftop area) may be required to meet 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 on-site, with the potential to be shared via a community solar arrangement that allows multiple users to access 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 Solar Only Alternative

The Solar Only alternative would develop a solar PV facility without a BESS. Energy generated at the facility would be directly distributed to the grid, rather than storing the energy on-site for optimally timed releases to the electrical grid to support resilience. Without the BESS, the project footprint would be reduced by approximately 4 acres. Impacts from this alternative would be relatively similar to those of the proposed Project; however, impacts from hazards and hazardous materials, noise, and wildfire would be reduced. Under this alternative, Project Objective 6 would not be met. The BESS is needed to help reduce the potential energy lost from off-site storage facilities. By building a BESS, it would allow energy to be stored on-site and distributed to the grid when needed. With the Solar Only alternative, energy would be directly distributed to the grid.

3.4.4 Undergrounded Gen-Tie Alternative

The Undergrounded Gen-Tie Alternative would place the gen-tie line connecting the proposed solar facility to the PG&E Cortina Substation underground rather than building the infrastructure overhead. Certain Project objectives would be met under this alternative. Under this alternative, impacts to biological and cultural resources, geology, air quality, noise, and water quality have the potential to be greater due to the amount of ground disturbance that would be required to underground the gen-tie. However, under this alternative, impacts to aesthetics and wildfire may be reduced.

3.4.5 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 3-1. 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).

The Northeast Site Alternative site size is approximately 31 acres larger than the Project site; however, it is anticipated that the alternative would use a larger amount of acreage for solar and ancillary facilities, 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. It should be noted that the Applicant

does not have the Northeast Site under site control and there is no certainty that it could do so. Additional analysis of the alternatives is included in Chapter 5.

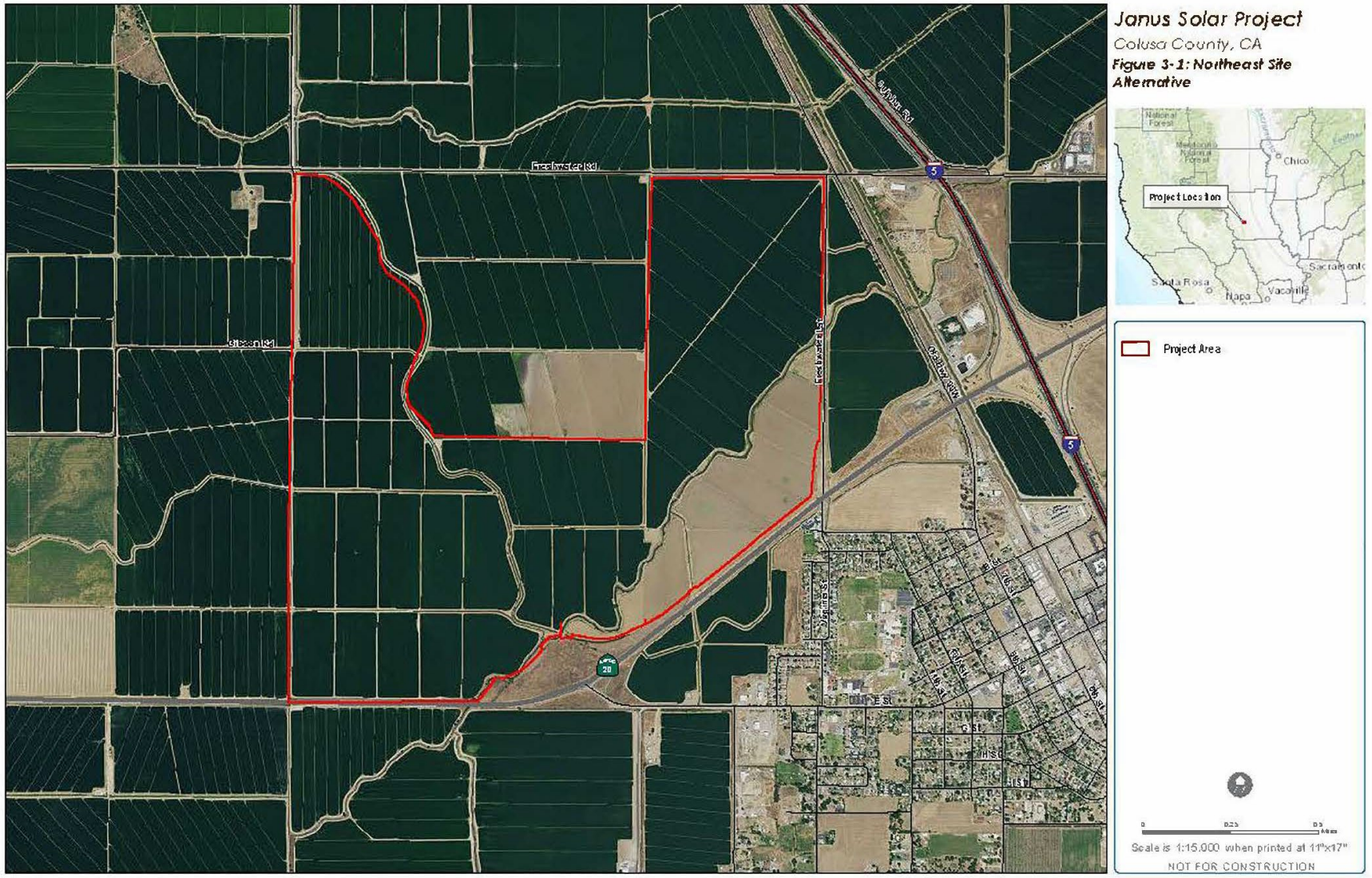


Figure 3-1. Northeast Site Alternative

3.5 REFRENCES

California Public Utilities Commission (CPUC). 2008. California Long Term Energy Efficiency Strategic Plan. Available at: https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/e/5305-eestrategicplan.pdf. Accessed June 2024.

CPUC. 2011. CA Energy Efficiency Strategic Plan, January 2011 Update. Available at: https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/c/5303-caenergyefficiencystrategicplan-jan2011.pdf. Accessed June 2024.

4.1 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 comments relating to Aesthetic Resources during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA.

4.1.1 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.

4.1.1.1 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, Inc. 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 2010). 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 B. 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 BLM's Visual Resource Inventory (VRI) classification system is a baseline description of the existing scenic values in the environment. The VRI developed by the BLM identifies the visual resources of a given area, and based upon specific standards, assigns an inventory class to each area. This process, further described in detail in BLM Manual H-8410-1 (BLM 2010), involves rating the resource's visual qualities, measuring public concern, and determining the extent to which an area is visible from travel routes and other observation points. Those three factors then determine which of the four VRI classes are assigned to each area of land based on visual sensitivity level (high, medium, and low), scenic quality, and distance. These four VRI classes represent the relative values of the existing visual resources. VRI Classes I and II represent the highest visual value, Class III represents moderate value, and Class IV represents relatively low visual value.

4.1 Aesthetics

Specific terminology used in describing the existing visual environment (BLM 1984) is provided below.

- Contrast. Opposition or unlikeness of different forms, lines, colors, or textures in a landscape. Contrast rating: a method of analyzing the potential visual impacts of proposed management activities.
- Form. The mass or shape of an object or objects that appears unified, such as a vegetative opening in a forest, a cliff or mountain formation, a water tank, or a highway overpass.
- Key Observation Point (KOP). One or a series of points on a travel route or at a use area or potential use area, where the view of an activity would be most revealing.
- Landscape Visibility. Perception of details (e.g., form, line, color, and texture) diminishes with increasing distance. The distance zone is dependent on the location of the observer relative to the Project. These distance zones are:
    - Foreground: 0 to 0.5 miles from point of interest
    - Middle ground: 0.5 to 5 miles from point of interest
    - Background: over 5 miles away from the point of interest
- Scenic Quality. Scenic quality is a measure of the visual appeal of a tract of land. In the visual resource inventory process, the apparent scenic quality is determined using seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications.
- Sensitivity Level. Sensitivity levels are a measure of public concern for scenic quality. Public lands are assigned high, medium, or low sensitivity levels by analyzing the various indicators of public concern.
- Simulation. A realistic visual portrayal that demonstrates the perceivable changes in landscape features caused by a proposed management activity. This is done using photography, artwork, computer graphics, and other such techniques.
- Texture. The visual manifestations of the interplay of light and shadow created by the variations in the surface of an object or landscape.
- Viewshed. A landscape unit seen from a KOP.
- Visual Quality. The relative worth of a landscape from a visual perception point of view.
- Visual Resource. The visible physical features on a landscape (for example, land, water, vegetation, animals, structures, and other features).

During the rating process, each of these factors is ranked on a comparative basis with similar features within the Project area. The BLM Visual Resource Management approach allows the various landscape elements that comprise visual quality to be quantified and rated with a minimum of ambiguity or subjectivity, which can be easily understood and compared by the reader.

According to this method, visual quality is rated according to the presence and characteristics of seven key components of the landscape. These components include landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications, defined as follows:

1. The ***landform*** component of the visual quality rating criteria takes into account the fact that topography becomes more interesting visually as it gets steeper or more massive, or more severely or universally sculptured. Outstanding landforms may be monumental (as found in Yosemite Valley), or they may be exceedingly artistic and subtle (such as certain ridgelines, pinnacles, peaks, and other extraordinary formations).
2. The ***vegetation*** component of the rating criteria gives primary consideration to the variety of patterns, forms, and textures created by plant life. Short-lived displays are given consideration when they are known to be recurring or spectacular. Consideration also is given to smaller scale vegetational features that add striking and intriguing detail elements to the landscape (e.g., hedgerows or trees, native grasses, etc.).
3. The ***water*** component of the rating criteria recognizes that visual quality is largely tied to the presence of water in scenery, as it is that ingredient which adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration in selecting the rating score for the water component.
4. The ***color*** component of the visual quality rating criteria considers the overall color(s) of the basic components of the landscape (e.g., soil, rock, vegetation, etc.). Key factors that are used when rating the color of scenery are variety, contrast, and harmony.
5. The ***adjacent scenery*** component of the rating criteria takes into account the degree to which scenery outside the view being rated enhances the overall impression of the scenery under evaluation. The distance of influence for adjacent scenery normally ranges from 0 to 5 miles, depending upon the characteristics of the topography, the vegetation cover, and other such factors. This factor generally is applied to views that normally would rate very low in score, but the influence of the adjacent high visual quality would enhance the visual quality and raise the score.
6. The ***scarcity*** component of the visual quality rating criteria provides an opportunity to give added importance to one or all of the scenic features that appear to be relatively unique or rare within a region. There may also be cases where a separate evaluation of each of the key factors does not give a true picture of the overall scenic quality of an area. Often, it is a number of not so spectacular elements in the proper combination that produces the most pleasing and memorable scenery – the scarcity factor can be used to recognize this type of area and give it the added emphasis it should have.
7. The ***cultural modifications*** component of the visual quality rating criteria takes into account any man-made modifications to the landform, water, vegetation, and/or the addition of man-made structures. Depending on their character, these cultural modifications may detract from the scenery in the form of a negative intrusion, or they may complement and improve the scenic quality of a view.

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.

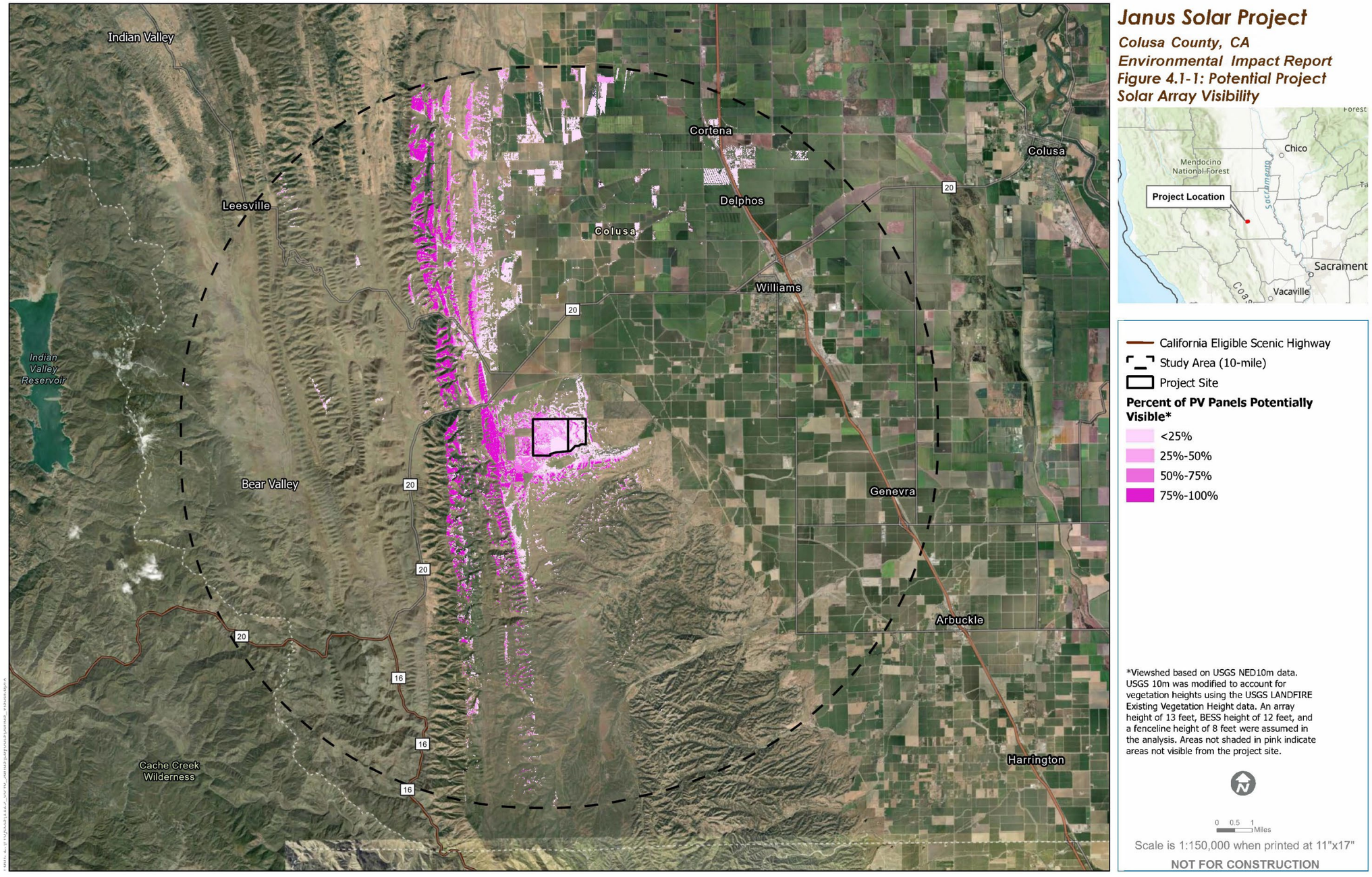
In general, adverse visual impacts are likely to occur when: a project takes place on a site with high existing visual quality; a project introduces a high level of contrast to the existing visual character of the project site and area; the sensitivity of the viewers is high; and the visibility of the site is high.

4.1.1.2 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 portions 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. Distance is only one of the factors that determine the visibility of a site from a viewpoint. Terrain, vegetation, and structural features can obscure views that might otherwise be available at a certain distance. A viewshed analysis is a graphic representation of locations that may have views of all or portions of the Project based on topography within the Project Zone of Visual Influence (ZVI).

A viewshed analysis includes the seen and unseen areas adjacent to the Project based on topography within the Project ZVI. The viewshed analysis was conducted using Esri ArcGIS software with the Spatial Analyst extension to process 10-meter digital elevation models, the height of the battery storage enclosures, and the height of the gen-tie line and poles above ground surface (Figures 4.1-1 and 4.1-2). The viewshed assumed "bare earth" conditions and was run from the Project area looking out to determine areas with potential visibility. The assumed "bare earth" conditions mean identification of areas with potential views of the Project were based on topography only. The analysis is also conservative because it does not account for screening by intervening structures, vegetation, curvature of the earth, small terrain changes, atmospheric conditions and attenuation, or other features. The ZVI was used to assist with the identification of potential KOPs.

[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.



Janus Solar Project

Colusa County, CA
Environmental Impact Report
Figure 4.1-1: Potential Project Solar Array Visibility

California Eligible Scenic Highway
Study Area (10-mile)
Project Site

Percent of PV Panels Potentially Visible*

<25%
25%-50%
50%-75%
75%-100%

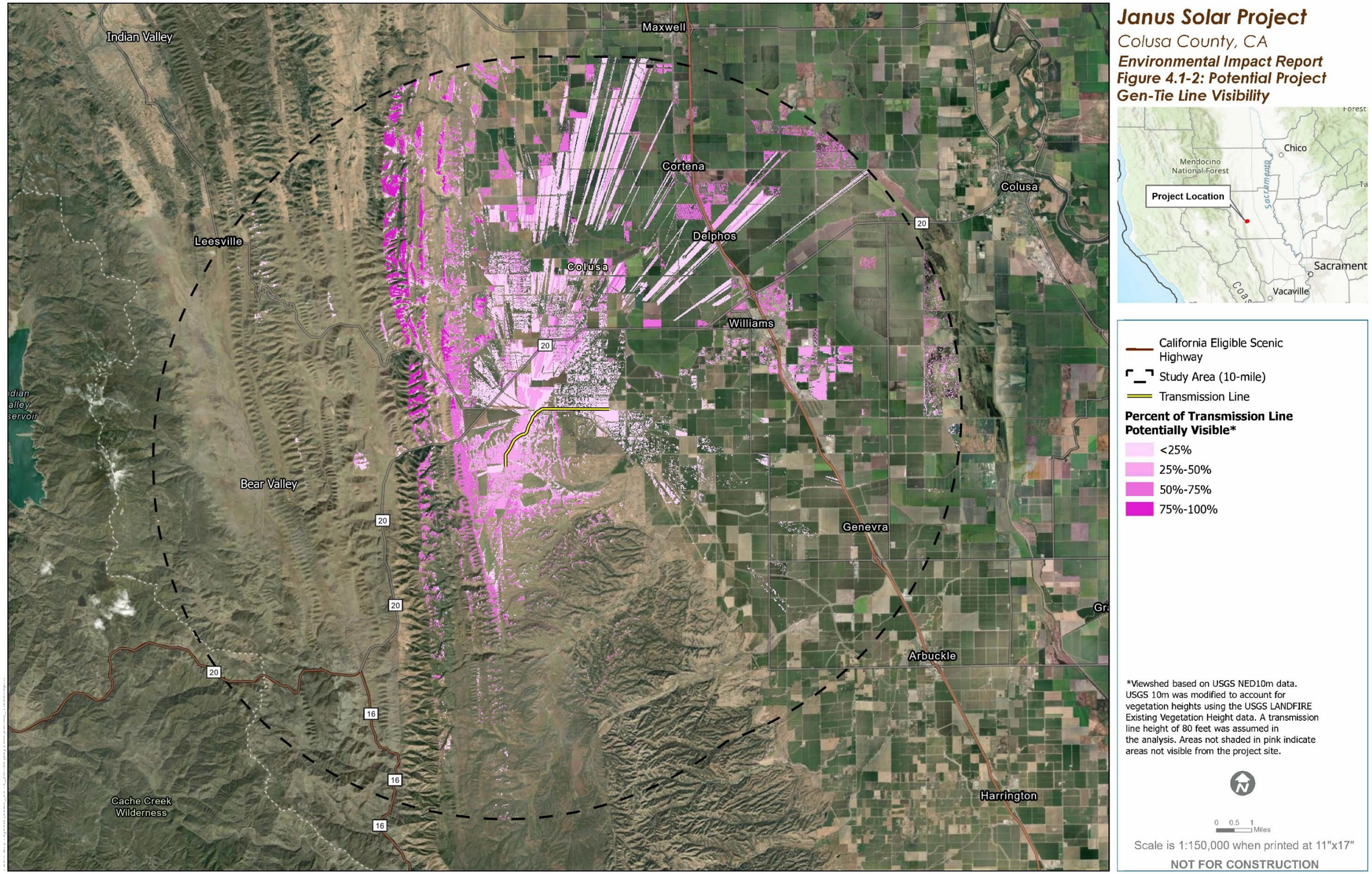
*Viewshed based on USGS NED10m data. USGS 10m was modified to account for vegetation heights using the USGS LANDFIRE Existing Vegetation Height data. An array height of 13 feet, BESS height of 12 feet, and a fenceline height of 8 feet were assumed in the analysis. Areas not shaded in pink indicate areas not visible from the project site.

0 0.5 1 Miles

Scale is 1:150,000 when printed at 11"x17"

NOT FOR CONSTRUCTION

Figure 4.1-1. Potential Project Solar Array Visibility



Janus Solar Project
Colusa County, CA
Environmental Impact Report
Figure 4.1-2: Potential Project Gen-Tie Line Visibility

California Eligible Scenic Highway
Study Area (10-mile)
Transmission Line

Percent of Transmission Line Potentially Visible*

<25%
25%-50%
50%-75%
75%-100%

*Viewshed based on USGS NED10m data. USGS 10m was modified to account for vegetation heights using the USGS LANDFIRE Existing Vegetation Height data. A transmission line height of 80 feet was assumed in the analysis. Areas not shaded in pink indicate areas not visible from the project site.

0 0.5 1 Miles

Scale is 1:150,000 when printed at 11"x17"

NOT FOR CONSTRUCTION

Figure 4.1-2. Potential Project Gen-tie Line Visibility

4.1.2 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 an object (Merriam-Webster 2024), in this case 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.

Eight 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 from publicly accessible areas (Figure 4.3-3).

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 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 (Figure 4.1-4 through Figure 4.1-13). Photographs of existing conditions were taken on July 3, 2024, using a digital single-lens reflex Canon 5D Mark III camera.

4.1.2.1 Visual Simulations

Three-dimensional visual simulations from representative KOP photos 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 as shown in Figure 2-2. The model was then georeferenced and placed on global positioning system–controlled site-specific photographs to create simulations that demonstrate visual changes from the Project. Figure 4.1-4 through Figure 4.1-13 present simulated views of Project features.

4.1.3 Existing Conditions

4.1.3.1 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. 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 Refuges Complex.

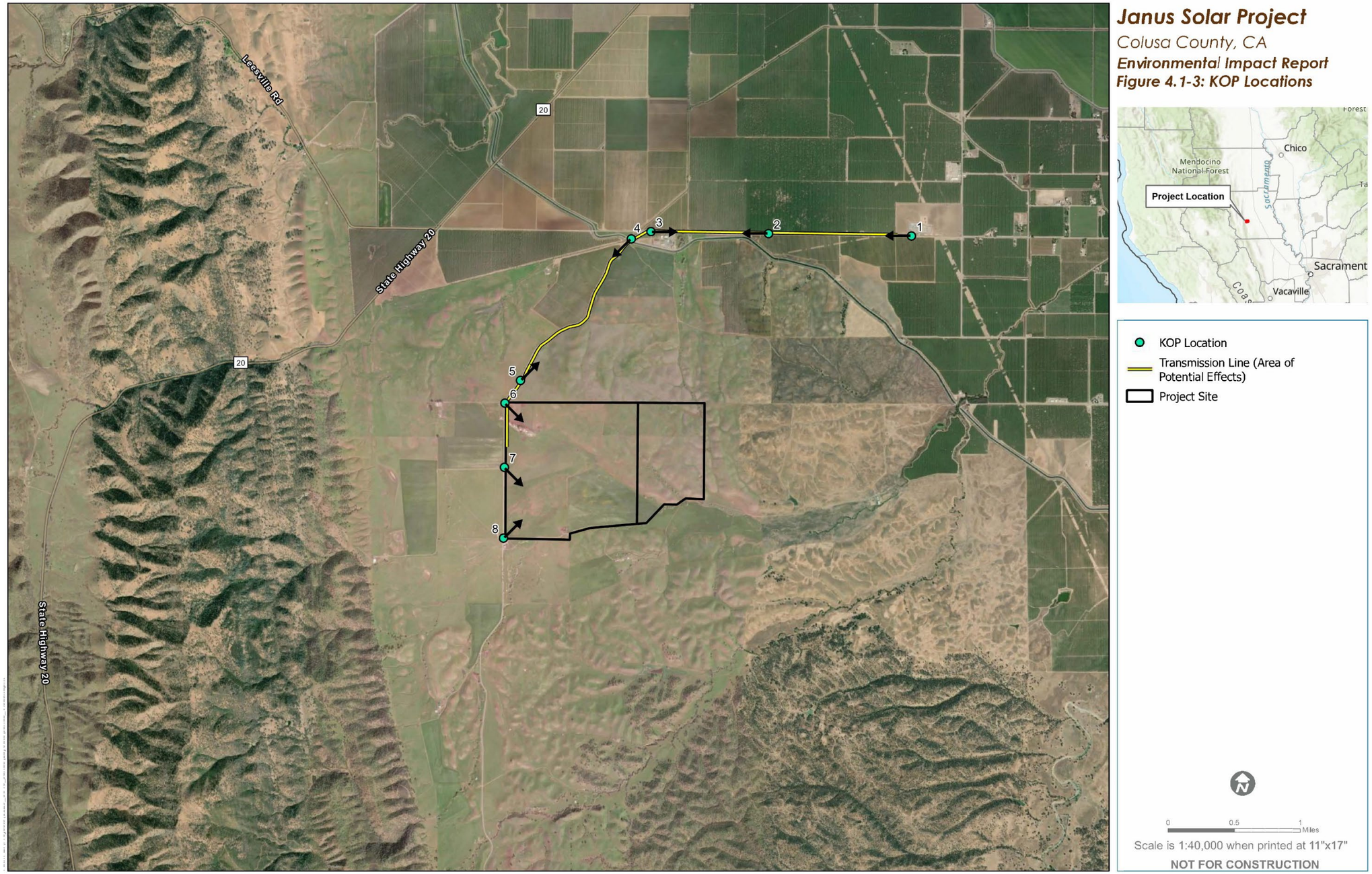


Figure 4.1-3. KOP Locations

Figure 4.1-4. Photo Simulation at KOP 1, Beauchamp Dr facing West

Figure 4.1-5. Photo Simulation at KOP 2, Beauchamp Dr facing West

Figure 4.1-6. Photo Simulation at KOP 3, Walnut Dr facing East

Figure 4.1-7. Photo Simulation at KOP 4, Spring Valley Rd facing Southwest

Figure 4.1-8. Photo Simulation at KOP 5, Spring Valley Rd facing Northeast

Figure 4.1-9. Photo Simulation at KOP 6, Spring Valley Rd facing Southeast

Figure 4.1-10. Photo Simulation at KOP 7, Full Tilt, Spring Valley Rd facing Southeast

EXISTING CONDITIONS

SIMULATED CONDITIONS

JANUS SOLAR PROJECT

Colusa County, CA

PHOTO SIMULATION

FIGURE 4.1-11
Key Observation Point 7, Flat Tilt: Spring Valley Rd facing Southeast

Photograph Information

Time of photograph:	12:35pm
Date of photograph:	7/2/2024
Weather condition:	Sunny
Viewing direction:	Southeast
Latitude:	39.094312°
Longitude:	-122.281640°

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

TETRA TECH RWE

Figure 4.1-11. Photo Simulation at KOP 7, Flat Tilt, Spring Valley Rd facing Southeast

Figure 4.1-12. Photo Simulation at KOP 8, Full Tilt, Spring Valley Rd facing Northeast

Figure 4.1-13. Photo Simulation at KOP 8, Flat Tilt, Spring Valley Rd facing Northeast

4.1.3.2 Local Setting

The Project site currently supports dry land cattle grazing and one pasture, depending on the time of year, is used for both grazing and grain cultivation for purposes of feeding cattle. 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.

4.1.3.3 Scenic Routes/Vista Points

According to the California Department of Transportation (Caltrans) Scenic Highway System Lists, there are no officially designated state scenic highways in the Project area. There are two eligible sections of State Route (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 2024a). There are no Department of Transportation designated vista points on I-5 near the Project site (Caltrans 2024b).

4.1.3.4 Existing Visual Character

Eight KOPs were selected to assess the level of visual change resulting from implementation of the Project as described in Section 3, Project Description, on the existing environment. The locations of the eight KOPs are shown in Figure 4.1-3. The KOPs were selected to capture representative vantages from Walnut Drive/Beauchamp Drive, Spring Valley Road, and residences north and south of the Project site. Photographs from each KOP under existing conditions are presented in Figure 4.1-4 through Figure 4.1-13.

Key Observation Point 1

KOP 1 is located on Walnut Drive/Beauchamp Drive, adjacent to the PG&E Cortina Substation. This KOP depicts the views oriented west toward the Walnut Drive/Beauchamp Drive portion of the Project gen-tie line route. As shown in Figure 4.1-4, the existing landscape setting is characterized by relatively flat agricultural land in the foreground and steeper terrain associated with the foothills of the Coast Ranges in the background. Existing structural features include transmission towers and lines, utility poles and lines, and roadway in the foreground. Vegetation includes grasses and orchards. Dominant colors for the landscape are tans and greens while the structures are gray and brown. The vegetation consists of irregular, organic forms. 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 Walnut Drive/Beauchamp Drive. Considering the short duration of viewing, viewers would have a low sensitivity to the visual changes in the area.

Key Observation Point 2

KOP 2 is located on Walnut Drive/Beauchamp Drive, between the PG&E Cortina Substation and Spring Valley Road. This KOP depicts the views oriented west toward the Walnut Drive/Beauchamp Drive portion of the Project gen-tie line route. As shown in Figure 4.1-5, the existing landscape setting is characterized by agricultural land relatively flat 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, utility poles and lines, and agricultural structures. Vegetation includes grasses and orchards. Dominant colors for the landscape are tans

and greens while the structures are gray and brown. The vegetation consists of irregular, organic forms. 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 Walnut Drive/Beauchamp Drive. Considering the short duration of viewing, viewers would have a low sensitivity to the visual changes in the area.

Key Observation Point 3

KOP 3 is located on Walnut Drive/Beauchamp Drive, near the intersection with Spring Valley Road. This KOP depicts the views oriented east toward the Walnut Drive/Beauchamp Drive portion of the Project gen-tie line route. As shown in Figure 4.1-6, the existing landscape setting is characterized by relatively flat agricultural land. Existing structural features include Spring Valley Road, fencing, utility poles and lines, and agricultural and residential structures. Vegetation includes grasses, ruderal vegetation and trees. Dominant colors for the landscape are tans and greens while the structures are gray and brown. The vegetation consists of irregular, organic forms. 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 Walnut Drive/Beauchamp Drive. Considering the short duration of viewing, viewers would have a low sensitivity to the visual changes in the area. This KOP also provides a typical view for the occupants of the residence on Walnut Drive/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 4

KOP 4 is located on Spring Valley Road, adjacent to the Colusa-Tehama Canal. This KOP depicts views oriented southwest. As shown in Figure 4.1-7, 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 poles and lines. Vegetation includes grasses, a stand of trees, and orchards. 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 near Spring Valley Road, approximately 0.15 miles north of the Project site. This KOP depicts views oriented northeast toward Spring Valley Road. As shown in Figure 4.1-8, the existing landscape setting is characterized by agricultural land with relatively flat terrain in the foreground/middle ground and rolling terrain in the background. Existing structural features include Spring Valley Road, fencing, utility poles and lines, and transmission towers. Vegetation includes grasses and trees. Dominant colors for the landscape are tan, and green while the structures are gray and brown. The vegetation consists of irregular, organic forms of contiguous grasses 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 6

KOP 6 is located on Spring Valley Road, immediately adjacent to the northwest corner of the Project site. This KOP depicts views focused southeast toward the Project site. As shown in Figure 4.1-9, the existing landscape setting is characterized by agricultural land with relatively flat terrain in the foreground and rolling terrain in the middle ground. Existing structural features include fencing, transmission lines, and residential and agricultural buildings. Vegetation includes grasses and stands of trees. Dominant colors for the landscape are green and tan while the structures are gray, brown, and white. 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 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 sensitivity to the visual changes in the area.

Key Observation Point 7

KOP 7 is located near Spring Valley Road, approximately 0.5 miles south of the of northwest corner of Project site. This KOP depicts the views oriented southeast toward the Project site. As shown in Figure 4.1-10 and Figure 4.1-11, the existing landscape setting is characterized by agricultural land with relatively flat terrain in the foreground and rolling terrain in the middle ground. Existing structural features include Spring Valley Road, fencing, and utility poles and lines. Vegetation includes grasses and occasional trees. Dominant colors for the landscape are tan and green while the structures are gray and brown. The vegetation consists of irregular, organic forms of contiguous grasses 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 sensitivity to the visual changes in the area.

Key Observation Point 8

KOP 8 is located on Spring Valley Road, immediately adjacent to the southwest corner of the Project site. This KOP depicts views focused southeast toward the Project site. As shown in Figure 4.1-12 and Figure 4.1-13, the existing landscape setting is characterized by agricultural land with relatively flat terrain in the foreground and rolling terrain in the middle ground. Existing structural features include fencing, utility poles and lines, and residential and agricultural buildings. Vegetation includes grasses and stands of trees. Dominant colors for the landscape are green and tan while the structures are gray, brown, and white. The vegetation consists of irregular, organic forms grasses that are continuous with the irregular shaped trees. The linear and horizontal lines associated with the structures are visible 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. Considering the frequent viewing by residents, viewers would have a moderate sensitivity to the visual changes in the area however, views from residences south of the Project site are partially screened by mature trees and/or terrain.

4.1.4 Regulatory Setting

4.1.4.1 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).

4.1.4.2 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 2024a). There are no Department of Transportation designated vista points on I-5 near the Project site (Caltrans 2024b).

4.1.4.3 Local

Colusa County

The Colusa County General Plan ("General Plan") 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 following General Plan policies related to Aesthetics to address aesthetics impacts of development:

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 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 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.

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*

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

4.1.5 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?*

4.1.6 Impact Analysis

IMPACT 4.1-1: *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 (Colusa County 2011, Caltrans 2024b). The Project site and surrounding area includes existing agricultural land and buildings, residences, and utility infrastructure. The Project area is not a scenic vista and would not be visible from any designated scenic vista. No impact on scenic vistas would occur.

IMPACT 4.1-2: *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 (Caltrans 2024a). 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 4.1-3*: In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations 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.

4.1.6.1 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 therefore not considered to be significant.

4.1.6.2 Operation

KOP 1

Most of the Project components, such as the solar PV generating components, substation, and BESS, would not be visible from this location because of the screening of the Project site by terrain and vegetation. The Project gen-tie line would introduce brown and gray colors and vertical and horizontal lines into the landscape setting and would be visible from this location by a casual observer (Figure 4.1-4). The lines associated with the gen-tie line would result in a visual contrast with the irregular, organic forms. However, the gen-tie will appear very similar to the structures

visible from this location that also possess brown and gray colors and horizontal and vertical lines (roadway, utility poles and lines, and transmission towers and lines). This viewpoint reflects the views of drivers traveling west along Walnut Drive/Beauchamp Drive. These impacts would be short term for travelers because they would only be paralleling the Project gen-tie line for a limited time. While appearing as a new and visible feature to the casual observer, the Project gen-tie would be consistent with other horizontal and vertical lines visible throughout the landscape and would be a subordinate feature in the landscape setting. The Project gen-tie would not block views of the surrounding agricultural fields or the foothills of the Coast Ranges. As the contrast is anticipated to be weak from this KOP, the visual impacts are considered minor and less than significant.

KOP 2

Most of the Project components, such as the solar PV generating components, substation, and BESS, would not be visible from this location because of the screening of the Project site by terrain and vegetation. The Project gen-tie line would introduce brown and gray colors and vertical and horizontal lines into the landscape setting and would be visible from this location by a casual observer (Figure 4.1-5). The lines associated with the gen-tie line would result in a visual contrast with the irregular, organic forms. However, the gen-tie will appear very similar to the structures visible from this location that also possess brown and gray colors and horizontal and vertical lines (roadway, utility poles and lines, and fences). This viewpoint reflects the views of drivers traveling west along Walnut Drive/Beauchamp Drive. These impacts would be short term for travelers because they would only be paralleling the Project gen-tie line for a limited time. While appearing as a new and visible feature to the casual observer, the Project gen-tie would be consistent with other horizontal and vertical lines and visible throughout the landscape and would be a subordinate feature in the landscape setting. The Project gen-tie would not block views of the surrounding agricultural fields or the foothills of the Coast Ranges. As the contrast is anticipated to be weak from this KOP, the visual impacts are considered minor and less than significant.

KOP 3

Most of the Project components, such as the solar PV generating components, substation, and BESS, would not be visible from this location because of the screening of the Project site by terrain and vegetation. The Project gen-tie line would introduce brown and gray colors and vertical and horizontal lines into the landscape setting and would be visible from this location by a casual observer (Figure 4.1-6). The lines associated with the gen-tie line would result in a visual contrast with the irregular, organic forms. However, the gen-tie will appear very similar to the structures visible from this location that also possess brown and gray colors and horizontal and vertical lines (roadway, utility poles and lines, and fences). This viewpoint reflects the views of drivers traveling east along Walnut Drive/Beauchamp Drive. These impacts would be short term for travelers because they would only be paralleling the Project gen-tie line for a limited time. While appearing as a new and visible feature to the casual observer, the Project gen-tie would be consistent with other horizontal and vertical lines and visible throughout the landscape and would be a subordinate feature in the landscape setting. The Project gen-tie would not block views of the surrounding agricultural fields. As the contrast is anticipated to be weak from this KOP, the visual impacts are considered minor and less than significant.

KOP 4

Most of the Project components, such as the solar PV generating components, substation, and BESS, would not be visible from this location because of the screening of the Project site by terrain and vegetation. The Project gen-tie line would introduce brown and gray colors and vertical and horizontal lines into the landscape setting and would be visible from this location by a casual observer (Figure 4.1-7). The colors and lines associated with the gen-tie line would result in a visual contrast with the irregular, organic forms. However, the gen-tie will appear very similar to the structures visible from this location that also possess brown and gray colors and horizontal and vertical lines (roadway, fences, and utility poles and lines). This viewpoint reflects the views of drivers traveling southwest along Spring Valley Road. These impacts would be short term for travelers because they would only be paralleling the Project gen-tie line for a limited time. While appearing as a new and visible feature to the casual observer, the Project gen-tie would be consistent with other horizontal and vertical lines and visible throughout the landscape and would be a subordinate feature in the landscape setting. The Project gen-tie would not block views of the surrounding agricultural fields or the foothills of the Coast Ranges. As the contrast is anticipated to be weak from this KOP, the visual impacts are considered minor and less than significant.

KOP 5

Most of the Project components, such as the solar PV generating components, substation, and BESS, would not be visible from this location in this direction. The Project gen-tie line would introduce brown and gray colors and vertical and horizontal lines into the landscape setting and would be visible from this location by a casual observer (Figure 4.1-8). The colors and lines associated with the gen-tie line would result in a visual contrast with the irregular, organic forms and colors of the existing landform and vegetation. However, the gen-tie will appear very similar to the structures visible from this location that also possess brown and gray colors and horizontal and vertical lines (roadway, fences, and utility poles and lines). This viewpoint reflects the views of drivers traveling northeast along Spring Valley Road. These impacts would be short term for travelers because they would only be paralleling the Project gen-tie line for a limited time. While appearing as a new and visible feature to the casual observer, the Project gen-tie would be consistent with other horizontal and vertical lines and visible throughout the landscape and would be a subordinate feature in the landscape setting. The Project gen-tie would not block views of the surrounding agricultural fields. As the contrast is anticipated to be weak from this KOP, the visual impacts are considered minor and less than significant.

KOP 6

The Project would introduce dark gray color, geometric shapes, and horizontal lines into the landscape setting and would be barely visible from this location by a casual observer, see Figure 4.1-9. The gray colors, regular geometric forms and horizontal lines of 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 and gray color (fencing, residential and agricultural buildings) and some are colored gray. This viewpoint reflects the views of drivers traveling south along Spring Valley Road. As the Project would begin to attract attention to the casual observer, the portion of the Project that would be visible would be subordinate to the existing structures and the landscape; thus, the contrast would be considered weak. 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. As the contrast is anticipated to be weak from this KOP, the visual impacts are considered minor and less than significant.

KOP 7

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 4.1-10. 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, when evaluating the Project's contrast with existing agricultural lands, it is important to note that the vegetative ground cover on the Project site would be visible below the solar panels and consistent with the existing vegetation in the area. In addition, the structures in the vicinity also possess horizontal and vertical lines and gray color (fencing, residential and agricultural buildings) and some are colored gray. The Applicant proposes using ground-mounted single axis trackers for the panel design, and the panels will follow the sun's position throughout the day. The simulation in Figure 4.1-10 shows panels at the maximum tilt orientation when the sun is at its lowest point on the horizon. Maximum tilt was simulated to show the anticipated view of the panels at their maximum height above ground surface (the highest point of the panels would be 13 feet above grade); however, the number of minutes the panels would be at maximum tilt would be a small portion of the total daylight hours per day. The panel orientation will change throughout the day, and when the sun is at its highest point in the sky, the panels will be in a flat orientation at a height of between 4 and 6 feet, on average (Figure 4.1-11). During the majority of the day, the panels will be oriented closer to a horizontal alignment that allows views through the Project site, reducing attention to and contrast from the Project. Therefore, during the majority of the day, the panels would introduce a weak contrast.

This viewpoint reflects the views of drivers traveling south along Spring Valley Road. As shown in the viewshed analysis (Figure 4.1-1), the Project solar panels are visible from publicly accessible locations when very near the Project site and visibility varies with the terrain and the viewer's location. Figure 4.1-17 shows a closer view of the viewshed analysis, which is considered conservative because it assumed "bare earth" conditions. From KOP 7, approximately 50 percent of the Project is potentially visible; however, the viewer would likely only notice the nearest rows. As discussed in Section 2, Project Description, three-rail fencing similar to the existing fencing along the perimeter of other properties in the area, may be utilized in addition to the metal fencing along the perimeter of the Project to help maintain the visual character of the site. As a condition of approval, prior to installation of any security fencing, the design of this fencing shall be submitted to the Community Development Director for review and approval. In general, the design of the fencing shall incorporate rural fencing characteristics to the greatest extent possible and avoid industrial or institutional designs. In addition, as shown in Figures 4.1-10 and 4.1-11, the Project does not block views of the surrounding hills. The view duration would be short and limited to the time driving near the Project site. As the Project would attract attention to the casual observer and would co-dominate with the hills in the middle ground, the contrast would be considered strong. 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.

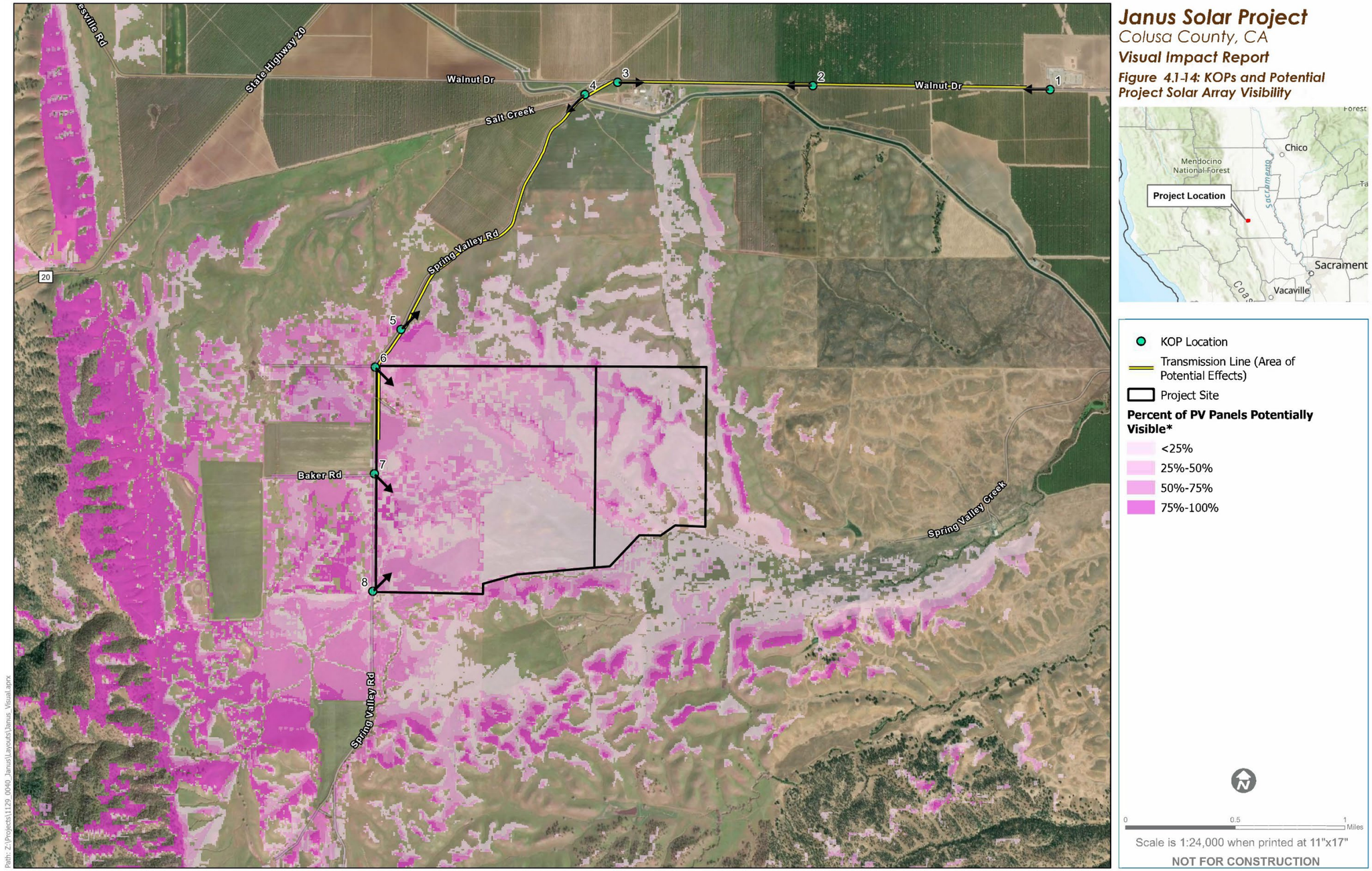
The Project would significantly change the characteristics of the site from agricultural to man-made structures; however, the Project site does not contain significant scenic features. On site there are no interesting landforms; the vegetation has little variety of patterns, forms, textures, or colors; and the scenic features are not unique or rare within the region. The adjacent off-site rolling hills and occasional trees provide more interesting scenic features, and the Project would not block views of the hills and trees. As the Project would for most of the day have a weak contrast, not change the visual quality of a site of high visual quality, and would not block views of the adjacent scenery, impacts would be less than significant.

KOP 8

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 4.1-12. 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, when evaluating the Project's contrast with existing agricultural lands, it is important to note that the vegetative ground cover on the Project site would be visible below the solar panels and consistent with the existing vegetation in the area. In addition, the structures in the vicinity also possess horizontal and vertical lines and gray color (fencing, residential and agricultural buildings) and some are colored gray. The Applicant proposes using ground-mounted single axis trackers for the panel design, the panels will follow the sun's position throughout the day. The simulation in Figure 4.1-12 shows panels at the maximum tilt orientation, when the sun is at its lowest point on the horizon. Maximum tilt was simulated to show the anticipated view of the panels at their maximum height above ground surface (the highest point of the panels would be 13 feet above grade); however, the number of minutes the panels would be at maximum tilt would be a small portion of the total daylight hours per day. The panel orientation would change throughout the day, and when the sun is at its highest point in the sky during the day, the panels would be in a flat orientation at a height of between 4 and 6 feet on average (Figure 4.1-13). During the majority of the day, the panels would be oriented closer to a horizontal alignment that allows views through the Project site, reducing attention to and contrast from the Project. Therefore, during the majority of the day, the panels would introduce a weak contrast.

This viewpoint reflects the views of drivers traveling north along Spring Valley Road. As shown in the viewshed analysis (Figure 4.1-1), the Project solar panels only visible from publicly accessible locations when very near the Project site, and visibility varies with the terrain and the viewer's location. Figure 4.1-17 shows a closer view of the viewshed analysis, which is considered conservative because it assumed "bare earth" conditions. From KOP 8, approximately 50 percent of the Project is potentially visible; however, the viewer would likely only notice the nearest rows. As discussed above, and in Section 2, Project Description, three-rail fencing similar to the existing fencing along the perimeter of other properties in the area, may be utilized in addition to the metal fencing along the perimeter of the Project to help maintain the visual character of the site. As a condition of approval, prior to installation of any security fencing, the design of this fencing shall be submitted to the Community Development Director for review and approval. In general, the design of the fencing shall incorporate rural fencing characteristics to the greatest extent possible and avoid industrial or institutional designs. In addition, as shown in Figures 4.1-12 and 4.1-13, the Project does not block views of the surrounding hills. The view duration would be short and limited to the time driving near the Project site. As the Project would attract attention from the

casual observer and would co-dominate with the landscape in the foreground and the hills in the middle ground, the contrast would be considered strong. 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 would be consistent with other horizontal and vertical lines and geometric shapes visible throughout the landscape. In addition, views from the residences south of the Project site are partially screened by mature trees and/or terrain.



Janus Solar Project
Colusa County, CA
Visual Impact Report
Figure 4.1-14: KOPs and Potential Project Solar Array Visibility

KOP Location
Transmission Line (Area of Potential Effects)
Project Site

Percent of PV Panels Potentially Visible*
<25%
25%-50%
50%-75%
75%-100%

0 0.5 1 Miles
Scale is 1:24,000 when printed at 11"x17"
NOT FOR CONSTRUCTION

Figure 4.1-14. KOPs and Potential Project Solar Array Visibility

The Project would substantially change the characteristics of the site from agricultural to man-made structures; however, the Project site does not contain significant scenic features. There are no interesting landforms on site; the vegetation has little variety of patterns, forms, textures, or colors; and the scenic features are not unique or rare within a region. The adjacent off-site rolling hills and occasional trees provide interesting scenic features, and the Project would not block views of the hills and trees. As the Project would for most of the day have a weak contrast, it would not significantly change the quality of the site's existing level of visual quality, and would not block views of the adjacent scenery, impacts would be less than significant.

IMPACT 4.1-4: *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. The 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" allows 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, what little light is reflected from the PV panels would travel above the line of sight of most, if not all, viewers. The 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 toward the sun. During midday conditions, when the sun is high in the sky, the rays of the sun are reflected directly upward. 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 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.

In addition, the Project will use and maintain, as feasible, non-reflective materials, finishes, surface treatments and maintain painted, treated, stained, or coated surfaces properly. Therefore, the Project will have a less than significant impact associated with glare.

4.1.7 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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

The PG&E Cortina Substation area is not a scenic vista and would not be visible from any designated scenic vista. No impact on scenic vistas would occur.

There are no officially designated state scenic highways in the vicinity of the PG&E Cortina Substation. The sections of SR-16 and SR-20 that are designated as eligible state scenic highways are located over 10 miles from the PG&E Cortina Substation. Due to terrain and distance, the PG&E Cortina Substation is not visible from these sections of these highways; therefore, no impact to a scenic highway will occur.

Existing structural features associated with these improvements include the PG&E Cortina Substation, transmission towers and lines, and utility poles and lines. Dominant colors for the surrounding landscape are tans and greens while the structures are gray and brown. The linear and horizontal lines associated with the structures are visible and prominent from Walnut Drive. These improvements would introduce brown and gray colors and vertical and horizontal lines into the landscape setting and would be visible to a casual observer. The lines associated with the transmission line, structures, and poles would result in a visual contrast with the irregular, organic forms found in the vegetation surrounding the PG&E Cortina Substation. However, the transmission line, structures, and poles will appear very similar to the structures visible from Walnut Drive which also possess brown and gray colors and horizontal and vertical lines (roadway, PG&E Cortina Substation, utility poles and lines, and fences). This reflects the views of drivers traveling along Walnut Drive/Beauchamp Drive. These impacts would be short term for travelers because the transmission line would be perpendicular to the roadway and the PG&E Cortina Substation footprint would remain the same, and only be visible for a limited time. While appearing as a new and visible feature to the casual observer, the transmission line would be

consistent with other horizontal and vertical lines and visible throughout the landscape and would be a subordinate feature in the landscape setting. These improvements would not block views of the surrounding agricultural fields or the foothills of the Coast Ranges. As the contrast is anticipated to be weak Because the new infrastructure would not include substantial new sources of light or glare, the PG&E Cortina Substation improvements would have no significant impact on criteria described for Impacts 4.1-1 through 4.1-4. No mitigation would be required.

4.1.8 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 location and the specific circumstances in which glare may be 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 if 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.

4.1.9 References

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4.2 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 comments regarding Agricultural and Forestry Resources during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA.

4.2.1 Existing Conditions

4.2.1.1 Agricultural Resources

The Project site largely consists of grazing land and is currently used by the landowner for dry land cattle grazing. The Project site is not classified as Unique or Prime farmland. The entire Project site has been classified as Farmland of Local Importance under the California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP). The Project site is surrounded by land also classified as Farmland of Local Importance

The Project site is located in Colusa County's Foothill Agriculture (F-A) zone, and the generation tie line (gen-tie) occurs in the F-A and Exclusive Agriculture (E-A) zones (Colusa County 2014). See Section 4.11, Land Use and Planning, for more information on land use and zoning. The Project site is included in a Williamson Act contract. Williamson Act-contracted parcels also surround the Project site. More information on the DOC farmland designations and the Williamson Act is provided in Section 4.2.2, *Regulatory Setting*, below.

The Project site does not have the infrastructure for irrigation, nor is there an existing agreement or connection with the local water district, Westside Water District.

4.2.1.2 Forestry Resources

The Project site does not contain 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)).

4.2.2 Regulatory Setting

4.2.2.1 Federal

Farmland Protection Policy Act (7 USC § 4201)

The purpose of the Farmland Protection Policy Act (FPPA) is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It additionally directs federal programs to be compatible with State and local policies for the protection of farmland. Under the FPPA, the term "farmland" includes Prime Farmland, Unique Farmland, and Farmland of Statewide or Local Importance. Farmland that is subject to FPPA requirements does not have to be currently used as cropland. It can be forestland, pastureland, or other land, except urban and built-up land or water. The FPPA assures that, to the extent possible, federal programs are administered to be compatible with State and local units of government, and with private programs and policies to protect farmland.

In 1981, Congress passed the Agriculture and Food Act (Public Law 97-98), which contained the FPPA, Subtitle I of Title XV, Section 1539–1549. The final rules and regulations were published in the Federal Register on June 17, 1994. Federal agencies are required to develop and review their policies and procedures related to implementing the FPPA every 2 years.

The FPPA does not authorize the federal government to regulate the use of private or nonfederal land or to in any way affect the property rights of owners. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or rely on assistance from a federal agency (NRCS, 2023).

4.2.2.2 State

California Department of Conservation, Division of Land Resource Protection
The DOC applies the Natural Resources Conservation Service (NRCS) soil classifications to identify agricultural lands. These agricultural designations are used in planning for the present and future of California's agricultural land resources. The DOC applies the soil classifications to a minimum mapping unit of 10 acres; parcels smaller than 10 acres are absorbed into the surrounding classifications.

The list below describes the categories mapped by the DOC (DOC, 2024) through the Farmland Mapping and Monitoring Program. Collectively, lands classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are referred to herein as "farmland."

- **Prime Farmland.** Farmland with the ideal combination of physical and chemical features. This land has the soil quality, growing season, and moisture supply needed for sustained high yields and long-term agricultural production. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the DOC mapping date.
- **Farmland of Statewide Importance.** Farmland that is similar to Prime Farmland, but with minor shortcomings, such as greater slopes or lower moisture content. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the DOC mapping date.
- **Unique Farmland.** Land with lesser quality soils that is used to produce the State's leading agricultural crops. This land is usually irrigated, but may include land that supports non-irrigated orchards or vineyards, as found in some climatic zones in California. The land must have been used for crops at some time during the 4 years prior to the DOC mapping date.
- **Farmland of Local Importance.** Land that is important to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.
- **Grazing Land.** Land on which the existing vegetation is suited to livestock grazing. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups with an interest in grazing activities.
- **Urban and Built-up Land.** Land that is developed, with structures built to a density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land supports residential, industrial, commercial, institutional, and public administrative uses;

railroad and other transportation yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment facilities; water control structures; and other developed uses.

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

California Land Conservation Act of 1965

The California Land Conservation Act of 1965 (Williamson Act, Government Code § 51200 et seq.) aims to prevent farmland from premature 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 enter into contracts to retain land included in an agricultural preserve[1] as agricultural or open space 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.

In 2023, DOC issued a guidance document detailing considerations for solar facilities on Williamson Act contracted land (DOC 2023). The five options for siting solar facilities on contracted land are as follows:

- **Non-Renewal**. A notice of non-renewal may 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.
- **Cancellation**. A Williamson Act contract cancellation is an option under the circumstances and conditions set forth in Government Code § 51280 et seq.
- **Compatibility**. Solar power generation facilities may be deemed to be compatible with contracted land if the project is consistent with the required findings in either Government Code § 51238.1(a) (the “principles of compatibility”) or Government Code § 51238.1(c) (non-prime land with use permit). The “principles of compatibility” require a local agency to assess the degree to which a use would impact underlying agricultural operations at a given site. The “principles of compatibility” include (Government Code § 51238.1(c)(1–3):

  (1) The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in agricultural preserves.

  (2) The use will 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 on the subject

[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.

contracted parcel or parcels or neighboring lands, including activities such as harvesting, processing, or shipping.

(3) The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

Independent from the "principles of compatibility," solar power generation facilities can also be an approved use on contracted land if they are located on non-prime agricultural land subject to a conditional use permit and they satisfy the findings outlined in Government Code § 51238.1(c)(1)–(4):

(1) Conditions have been required for, or incorporated into, the use that mitigate or avoid those on-site and off-site impacts so as to make the use consistent with the principles set forth in paragraphs (1) and (2) of subdivision (a) to the greatest extent possible while maintaining the purpose of the use.

(2) The productive capability of the subject land has been considered as well as the extent to which the use may displace or impair agricultural operations.

(3) The use is consistent with the purposes of this chapter to preserve agricultural and open-space land or supports the continuation of agricultural uses, as defined in Section 51205, or the use or conservation of natural resources, on the subject parcel or on other parcels in the agricultural preserve. The use of mineral resources shall comply with Section 51238.2.

(4) The use does not include a residential subdivision.

- **Eminent Domain**. A public agency (or other person with requisite authority to condemn property) may acquire land by eminent domain, therefore, rendering the Williamson Act contract void.
- **Solar Use Easement**. Williamson Act contracts may also be rescinded in favor of a solar use easement for pursuant to Government Code §§ 51191–51191.8, and 51255.1. Entering into a solar use easement is a discretionary action by a local agency, subject to DOC review and approval. Solar use easements require that land be used for solar power generation facilities for at least 20 years, unless a landowner requests a shorter term, which in no case may be less than 10 years.

Farmland Security Zone Act

The Farmland Security Zone Act is similar to the Williamson Act. It was passed by the California State Legislature in 1999 to ensure that long-term farmland preservation is part of public policy in the state. Farmland Security Zone Act contracts are sometimes referred to as "Super Williamson Act Contracts." Under the provisions of this Act, a landowner who is already under a Williamson Act contract can apply for Farmland Security Zone status by entering into a contract with the County. Farmland Security Zone classification automatically renews each year for an additional 20 years. In return, for a further 35 percent reduction in the taxable value of land and improvements (in addition to Williamson Act tax benefits), the owner of the property promises not to develop it for nonagricultural uses.

Public Resources Code Section 21060.1

Public Resources Code Section 21060.1 uses the FMMP to define agricultural land for the purposes of assessing environmental impacts. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and analyze the conversion of such lands. The FMMP provides analysis pertaining to agricultural land use changes throughout California.

4.2.2.3 Local

Colusa County General Plan

The Colusa County General Plan ("General Plan") 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 following General Plan policies related to Agricultural and Forestry Resources to address agricultural impacts of development and are relevant to the proposed Project include (see also Section 4.11, *Land Use and Planning*):

Goal AG-1: *Preserve and protect agricultural land*.

Objective AG 1-A: *Recognize that Agricultural Land is the County's Greatest Natural Asset and Take Appropriate Measures to Restrict the Conversion of Agricultural Lands to Non-Agricultural Uses.*

Policy AG 1-1: The following General Plan land use designations are considered agricultural lands: Agricultural General (AG), Agricultural Upland (AU), and Agricultural Transition (AT).

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 certain criteria are met*].

Goal AG-2: ***Maintain and enhance agriculture as the County's most critical land use, economic sector, and resource.***

Objective AG 2-A**:** *Expand Opportunities for Economic Development and Increased Agricultural Production by Allowing Agricultural Processing Facilities and Uses Directly Supporting Agriculture in All Agricultural Land Use Categories.*

Action AG 2-A: Revise the Zoning Ordinance to allow agricultural support facilities as a principal permitted use on lands designated for agricultural use. The revision to the zoning ordinance shall establish definitions and standards in the Zoning Ordinance that differentiate between facilities that support agricultural uses, such as those directly necessary for processing, packaging, distribution, and on-site energy production, and those facilities that are industrial or commercial in nature and do not directly support agricultural activities and are not appropriate for development, without a Conditional Use Permit, in an agricultural zoning classification. The revisions shall identify performance standards that agricultural support facilities permit requests shall comply with, including [*list of standards*].

Objective AG-2B: *Allow Limited Recreation and Resource Production Uses on Agricultural Lands While Ensuring that Such Uses Do Not Adversely Affect Agricultural Activities.*

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.

Action AG 2-D: Revise the Zoning Ordinance to define alternative energy and to develop performance standards for energy-generating and resource extraction uses on agricultural lands. These performance standards shall address environmental impact mitigation and compatibility with surrounding land uses, including but not limited to [*list of standards*].

Goal LU-2: *Maintain Agriculture as the Paramount Land Use in the County and Ensure Land Use and Planning Decisions Support a Strong Agricultural Economy*

Objective LU-2A: *Conserve and Protect Agricultural Land through a Variety of Strategies, including General Planning, Zoning, Taxation, and Easements.*

Policy LU 2-2: Ensure that future development and land use decisions protect the integrity of agriculture and do not in any way create a hardship for the county's farmers.

Objective LU-2A: *Only Permit Development of Agricultural Land that will Not Interfere with Viable Agricultural Operations.*[2]

Policy LU 2-11A: 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.

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 2-3: 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.

Colusa County Zoning Code

The Project site is in Colusa County's Foothill Agriculture (F-A) zone, and the gen-tie line from the Project site intersects land zoned as F-A and Exclusive Agriculture (E-A) (Colusa County 2014). The Colusa County Zoning Code addresses permitted uses in E-A and F-A zoning districts, which allow energy generation for off-site use with a Use Permit (Colusa County Zoning Code § 44-2.20.30). Alternatively, if a parcel is subject to an Energy Production (EP) Overlay Zone, energy generation for off-site use is permitted with a Minor Use Permit (Colusa County Zoning Code § 44-2.80.020). Because no EP Overlay zone applies to the Project site, the Applicant is pursuing a Use Permit for the Project.

[2] Note that the General Plan contains two Objectives labeled "LU 2-A," and this Objective is the second labeled as such on page 8-19 of the Land Use Element.

Resolution 02-82

The Williamson Act also requires that participating local agencies adopt policies regarding implementation of the Act within their jurisdiction (Government Code § 51231.) On December 17, 2002, the Board of Supervisors adopted Resolution 02-82, which established rules implementing the Williamson Act within the County. The resolution sets forth the permitted and compatible uses on Williamson Act contracted land within the County, which include "[t]he erection, construction, alteration or maintenance of gas, electric, water, or communication utility facilities."

The Board of Supervisor's Williamson Act Ad-Hoc Committee has been working on a comprehensive update to the County's Williamson Act Program. As of the writing of this DEIR, a draft of the updated program has not been released for public review.

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."*

Consistent with California Civil Code Section 34282.5, the purpose of the Right to Farm Ordinance is to ensure that neighbors are informed of ongoing farming activities and to prevent nuisance actions from being directed at agricultural operators because of their activities. 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 2023).

4.2.3 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.

4.2.4 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 (DOC) as an optional model to use in assessing impacts to 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 the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project, as well as 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 Land Evaluation and Site Assessment (LESA) modeling (Appendix B-1), Addendum to the LESA (Appendix B-2), site-specific zoning, and mapping available pursuant to the DOC Farmland Mapping and Monitoring Program. 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 4.2-1*: 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 DOC; it is not classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, there would be no conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use as a result of the Project implementation.

Based on information from the United States Department of Agriculture (USDA) Natural Resources Conservation Service, there are three soil types found on the Project that may be considered Prime Farmland, but only if irrigated: Capay clay (approximately 33 percent of the Project site), Clear Lake Clay (approximately 0.7 percent of the Project site), and Corval loam (approximately 3.5 percent of the Project site). As stated previously, the property does not have irrigation infrastructure or an existing agreement or connection with the Westside Water District that would supply irrigation water. The availability of irrigation water in the future is speculative, given the substantial cost associated with installing such infrastructure (including, but not limited to pumps, irrigation lines, or sprayers); uncertainty concerning annexation into the Westside Water District; and the availability of water supply.

Thus, the property does not include existing Prime Farmland, Unique Farmland or Farmland of Statewide Importance, and it is not reasonably likely to include Prime Farmland in the future given the lack of irrigation. Accordingly, the temporary conversion of the land from agricultural grazing uses to renewable energy production and energy storage during the life of the Project is not a

significant adverse impact on agricultural resources due to the conversion of Prime, Unique, or Farmland of Statewide Importance.

IMPACT 4.2-2*: Conflict with existing zoning for agricultural use, or a Williamson Act contract?* **(Less Than Significant Impact)**

The Project site is zoned F-A, and the gen-tie line from the Project site intersects land zoned as F-A and E-A. Zoning Code § 44-2.20.30 allows for energy generation for off-site use with a Use Permit within the F-A and E-A zones. Therefore, the Project is consistent with zoning (as a conditionally-permitted use under the existing County Zoning Code), would not require a zone change, and would remain designated for agriculture, consistent with Policy AG 1-2.

The Project site is included in a Williamson Act contract. Solar power generation facilities may be compatible with the Williamson Act if the use meets the "principles of compatibility" in the Williamson Act (Government Code § 51238.1(a)) or satisfies the findings in Government Code § 51238.1(c) (non-prime land with a use permit).

The Project site is located on soils that could be Prime Farmland if they were irrigated, however, the site is not irrigated and does not have any existing irrigation infrastructure or have an existing connection to the Westside Water District, and is currently used by the landowner for dry cattle grazing. The landowner would be able to continue to use the land for cattle grazing on other portions of the site during construction and operation of the Solar Facility and BESS without reducing the size of the herd as a result of the Project. Because the site has low agricultural capabilities and minimal water access, there are no other reasonably foreseeable agricultural operations that could occur at the site besides the historical cattle grazing.

The Project is also not anticipated to impact the long-term agricultural capacity of other similarly contracted parcels in the surrounding area. The Project would not bring new users or residents to the Project site during its operations. There are approximately 318,000 acres of Williamson Act land within the County. The Project's 886 acres would represent less than 1 percent (0.28%) of the County's total acreage.

As noted above, the Project requires a Use Permit for energy generation for off-site use within the F-A and E-A zones. The Use Permit would include conditions that protect or promote agriculture and that further ensure the Project does not compromise the long-term agricultural productivity of the Project site. For example, at the end of the Project's life, the Project would be fully decommissioned, and the land restored to its current state. All solar panels, batteries, and related facilities would be removed—an obligation that would be secured by the posting of a bond, which is a requirement of the Use Permit. The conditions of approval for the Use Permit would also require compliance with the various environmental requirements in the Mitigation Monitoring and Reporting Program (MMRP) for the Project, which include dust and noise control measures, including Mitigation Measures **AQ-1** through **AQ-3**, **NOISE-1**, as well as approval of a Stormwater Pollution Prevention Plan to ensure that any potential impacts on adjacent parcels during construction are minimized to the satisfaction of the County.

For the reasons above, the Project would not conflict with the applicable F-A and E-A zones or the Williamson Act contract that applies to the Project site.

IMPACT 4.2-3*: 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 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)).

IMPACT 4.2-4*: Result in loss of forest land or conversion of forest land to non-forest use?* **(No Impact)**

The Project site is not forest land; it is designated in the County General Plan as "Agricultural Upland" and "Agricultural General" and has been historically used for dry land cattle grazing. Therefore, no loss of forest land or conversion of forest land to non-forest use would occur as a result of the Project.

IMPACT 4.2-5: *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-1) 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 (Appendix B-1) and the Addendum to the LESA (Appendix B-2), 100 percent of the land within the Project's Zone of Influence is agricultural and is 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 the Zone of Influence due to the on-site soils, project size, and lack of irrigation.

As stated in Impact 4.2-1, there are three soil types found on the Project that may be considered Prime Farmland, but only if irrigated: Capay clay (approximately 33 percent of the Project site), Clear Lake Clay (approximately 0.7 percent of the Project site), and Corval loam (approximately 3.5 percent of the Project site). The property does not have irrigation infrastructure or an existing agreement or connection with the Westside Water District that would supply irrigation water. The availability of irrigation water in the future is speculative, given the substantial cost associated with installing such infrastructure (including, but not limited to pumps, irrigation lines, or sprayers);

uncertainty concerning annexation into the Westside Water District; and the availability of water supply.

An alternative scenario evaluating what the impacts to the Project site would be if it were irrigated was considered but eliminated for the reason that irrigation infrastructure does not exist on the Project site nor does a connection with the local water district, Westside Water District. Further evaluation would be highly speculative and would not inform the impact analysis discussed here, which compares the potential environmental impacts of implementing the proposed Project against the existing conditions of the Project site.

4.2.5 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

No 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. Therefore, the PG&E Cortina Substation improvements would have no significant impact on criteria described for Impacts 4.2-1 through 4.2-5. No mitigation would be required.

4.2.6 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, nor 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 relates to other changes in the existing environment, which, due to their location or nature, could result in agricultural impacts in Colusa County.

The environmental setting described in Section 4.2.1 reflects previous impacts of past projects to agriculture resources, including 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. Project impacts to the existing Williamson Act contract on the Project site are less than significant, site-specific, and not expected to result in impacts on contracted land. 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 the 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 cumulatively 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.

4.2.7 References

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4.3 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 received comments regarding Air Quality during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA. Information in this section is based on the Air Quality and Greenhouse Gas Technical Report located in Appendix D of this EIR.

4.3.1 Existing Conditions

4.3.1.1 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 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; it 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 2021). Therefore, Colusa County's topography and meteorology have the potential to cause 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 and 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, 17.19 inches of precipitation annually, with the most rainfall occurring during the winter months (NOAA NCDC 2024).

4.3.1.2 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. The 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 Valley Planning Area (NSVPA), ozone can be produced by stationary source emissions, such as

internal combustion engines or boilers; mobile sources, such as cars, trucks, and trains; or area sources, such as consumer products or wildfires. The NSVPA also experiences 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. Reactive organic gases 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 the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) provisions.

Nitrogen Oxides (NO_x) are a family of gaseous nitrogen compounds that result primarily from the combustion of fossil fuels. They are precursors to the formation of ozone and particulate matter, and nitrogen dioxide (NO_2) is regulated directly under the NAAQS and California Ambient Air Quality Standards (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, or formed in the atmosphere by chemical reactions among precursors. Particulate matter can be categorized based on 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 and are generally emitted by combustion sources such as 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 for both the federal and California standards for SO_2. The use of low-sulfur fuel has greatly reduced problems with this pollutant.

4.3.1.3 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. There are four residences in proximity to the Project site that are not owned by the Project site landowner. One residence is approximately 100 feet south of the Project site, near the Project's southwest corner, and another is located further south, more than 1,000 feet from the Project's southern

boundary. There is another residence located northwest of the Project, also more than 1,000 feet from the Project's northwest corner. The fourth residence is approximately 430 feet south of the proposed gen-tie line, along Walnut Road. The residence in the Project site's northwest corner, and across Spring Valley Road, are owned by the Project site landowner (see Figure 2-2).

Some agricultural buildings are also located to the west of the Project site. The remaining residences and other sensitive receptors are located more than 1,000 feet from the Project site. To the east, the nearest residence is just under two miles from the nearest site boundary. 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.

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 the construction phase and would depend on the staging of the work being conducted, location of work relative to receptors, and weather conditions.

An aerial map showing the 1,000-foot buffer, and nearby sensitive receptors is provided as Figure 4.3-1.

4.3.2 Regulatory Setting

Ambient air quality standards are the levels of air pollutants 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 Clean Air Act (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 4.3-1, State and Federal Ambient Air Quality Standards.

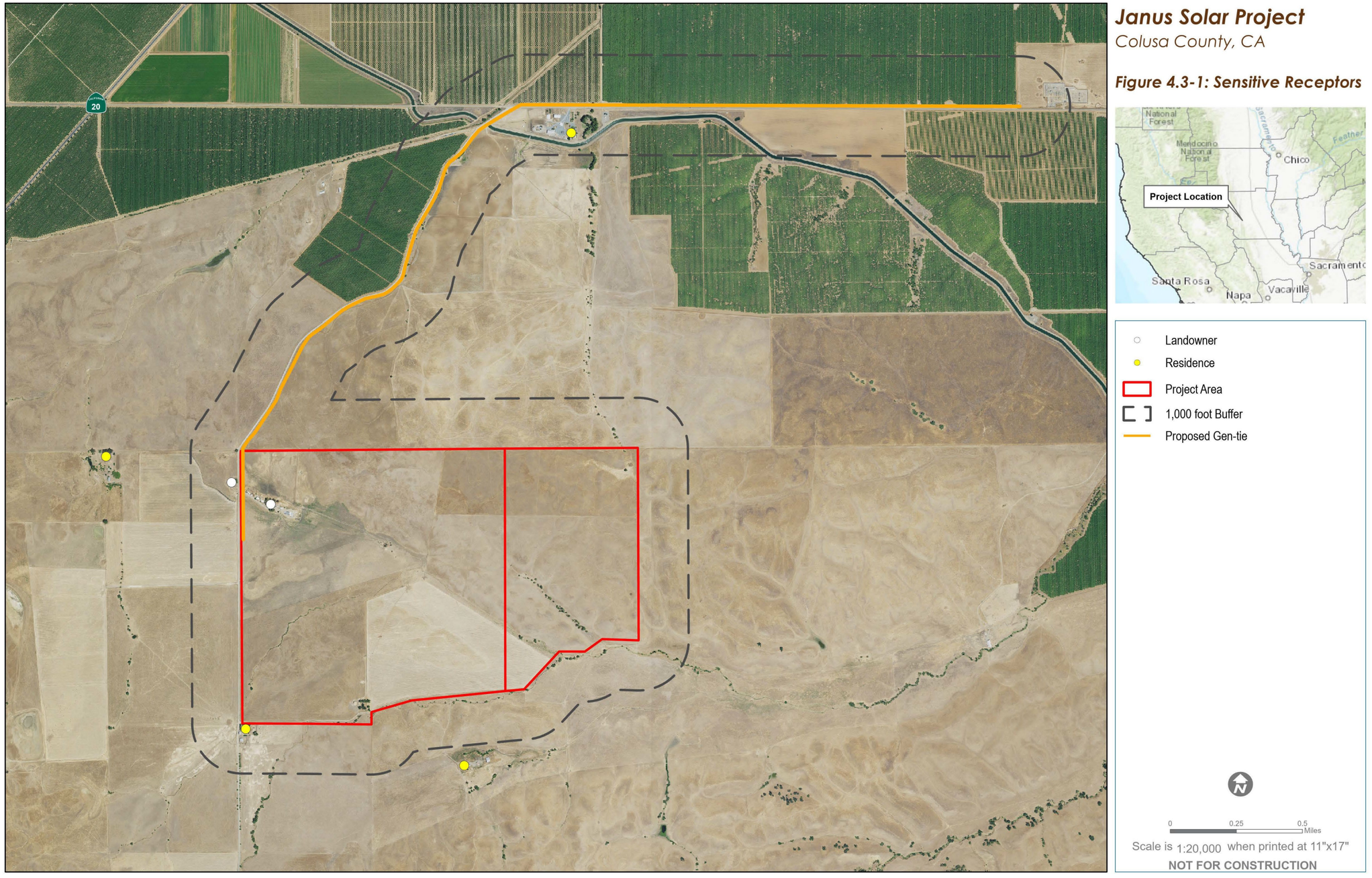

Figure 4.3-1. Sensitive Receptors

4.3.2.1 Federal Regulations

Criteria Air Pollutants

The federal CAA (42 United States Code [U.S.C.] Sections 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.

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. Hazardous air pollutants 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.

4.3.2.2 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 4.3-1, State and Federal Ambient Air Quality Standards.

The CCAA requires each air pollution control district of an air basin designated as a nonattainment area with respect to state ambient air quality standards to prepare and submit a plan for attaining and maintaining state standards.

4.3 Air Quality

Table 4.3-1. 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	9.0 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]	—	
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**		
Sulfate (SO_4)	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	24 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			

4.3 Air Quality

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3, 5]	Secondary[3, 6]	Method[7]
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) (https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health, accessed July 2024) and U.S. Environmental Protection Agency (https://www.epa.gov/outdoor-air-quality-data, accessed July 2024)*

1 California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour 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 per year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 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.

13 The national annual average $PM_{2.5}$ standard was most recently revised in 2024 following an exhaustive review of new literature pointing to evidence of continued risk of premature mortality and other health effects at lower $PM_{2.5}$ concentrations than the existing standard (CARB, 2024c)

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. Toxic Air Contaminant 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.

Diesel particulate matter (DPM), a mixture of solid particles in diesel engine exhaust, is classified as a carcinogen and TAC in California. Long-term exposure to DPM poses the highest cancer risk of any TAC evaluated by OEHHA. According to CARB estimates, about 70 percent of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from DPM. Exposure to DPM is highest near roads and freeways, truck loading and unloading operations, and diesel-powered machinery operations. Exposure to diesel exhaust, in general, can have immediate health effects such as irritation to the eyes, nose, throat, and lungs. It can also cause coughs, headaches, light-headedness, and nausea (OEHHA 2024).

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, which require 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 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.

State Implementation Plans

The federal CAA requires all states to submit a State Implementation Plan (SIP) to USEPA. State Implementation Plans are not single documents. They are a compilation of new and previously

submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. Many of California's SIPs and attainment plans rely on the same core set of control strategies described above, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. State law designates CARB as the lead agency for all purposes related to SIPs and attainment plans. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB forwards those revisions to USEPA for approval and publication in the Federal Register.

The law also requires submission of attainment plans for areas that are designated nonattainment with respect to the NAAQS. These attainment plans are comprehensive plans that describe how a federal nonattainment area will attain and maintain the particular NAAQS standard(s) it does not conform to. Once the area is redesignated as in attainment for the NAAQS in question, a maintenance area classification is required for a period of 20 years to provide assurance the area will continue to be in attainment, and SIPs must be submitted under this maintenance area classification.

4.3.2.3 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.

The 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. The 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 General Plan

The Colusa County General Plan ("General Plan") 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 following General Plan policies related to air quality and conservation are relevant to the proposed Project and were included to address air quality impacts of development:

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

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.

Objective CON-2B: *Minimize Air Pollutant Emissions and Improve Air Quality to Protect Public Health.*

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.

Action CON 2-E: Refer development, infrastructure, and planning projects to the Colusa County Air Pollution Control District (APCD) for review. Require project applicants to prepare air quality analyses to address APCD and General Plan requirements, which include analysis and identification of:

a) Air pollutant emissions associated with the project during construction, project operation, and cumulative conditions.

b) Significant air quality impacts associated with the project for construction, project operation, and cumulative conditions.

c) Mitigation measures to reduce significant impacts to less than significant, or the maximum extent feasible where impacts cannot be mitigated to less than significant.

Action CON 2-F: Coordinate with the APCD to develop: 1) Thresholds for criteria pollutants associated with construction activities, and 2) a list of standard best management practices (BMPs) to be implemented during construction activities.

Action CON 2-G: Continue to implement measures and strategies contained in the Northern Sacramento Valley Air Quality Attainment Plan.

4.3.3 Regional and Local Air Quality Conditions

4.3.3.1 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. As shown in Table 4.3-2, the Project site is a state nonattainment area for PM_{10}.

Table 4.3-2. 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

Pollutant	Designation/Classification	
	Federal Standards	State Standards
$PM_{2.5}$	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 2024a

4.3.4 Local Ambient Air Quality

Ambient air quality for the project site can be determined from ambient air quality measurements conducted at nearby air quality monitoring stations. The closest ambient air quality monitoring station to the Project site that monitors O_3, PM_{10} and $PM_{2.5}$ is the Sunrise Blvd. monitoring station located at 100 Sunrise Blvd. in Colusa. For NO_2, the closest monitor is the Yuba City monitoring station located at 773 Almond St in Yuba City. For SO_2, the closest monitor is the Sacramento Del Paso Manor located at Del Paso-2701 Avalon Dr, Sacramento. Finally, for CO, the monitor located at 984 East Avenue, Chico is closest to the Project site. Table 4.3-3, Local Ambient Air Quality Monitoring Data, summarizes the data from 2021 to 2023 and the number of days the ambient air quality standards were exceeded each year.

Table 4.3-3. Local Ambient Air Quality Monitoring Data

Averaging Period	2021	2022	2023
Ozone (O_3) – Sunrise Blvd, Colusa, California Monitoring Station (AQS Site ID: 06-011-1002)			
1-hour Maximum Concentration (ppm)	0.074	0.068	0.072
Number of days exceeding CAAQS = **0.09 ppm**	0	0	0
8-hour Maximum Concentration	0.064	0.062	0.064
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)	47	50	38
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**)	5.39	6.6	5.76
Carbon Monoxide (CO) – Chico, California Monitoring Station (AQS Site ID: 06-007-0008)			
1-hour Maximum Concentration (ppm)	1.8	1.6	1.7
Number of days exceeding CAAQS = **20 ppm**	0	0	0
Number of days exceeding NAAQS = **35 ppm**	0	0	0
8-hour Maximum Concentration	1.5	1.2	1.3
Number of days exceeding CAAQS = **9.0 ppm**	0	0	0
Number of days exceeding NAAQS = **9.0 ppm**	0	0	0
Coarse Particulate Matter (PM_{10}) – Sunrise Blvd, Colusa, California Monitoring Station (AQS Site ID: 06-011-1002)			
24-hour Maximum Concentration (µg/m^3)	183.7	76.0	79.5
Number of days exceeding CAAQS = **50 µg/m^3**	47	17	14
Number of days exceeding NAAQS = **150 µg/m^3**	1	0	0
Annual Average Concentration (state method) (µg/m^3) (**20 µg/m^3**)	29.2	21.0	21.1
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)	86.6	37.0	32.5
Number of days exceeding NAAQS = **35 µg/m^3**	11	1	0
Annual Average Concentration (µg/m^3) (**12 µg/m^3**)[1]	-	7.2	-
Sulfur Dioxide (SO_2) – Sacramento Del Paso Manor, California Monitoring Station (AQS Site ID: 06-067-0006)			
1-hour Maximum Concentration (ppm)	0.0022	0.0028	0.0023
Number of days exceeding NAAQS = **0.075 ppm**	0	0	0

Averaging Period	2021	2022	2023
24-hour Maximum Concentration (ppm)	0.001	0.0006	0.0011
Number of days exceeding NAAQS = **0.14 ppm**	0	0	0
Annual Average Concentration (ppm) (**0.03 ppm**)	0.00013	0.00012[2]	0.00012

[1] Revised to 9 µg/m^3 effective May 6, 2024 (89 FR 16202, Reconsideration of the National Ambient Air Quality Standards for Particulate Matter)
[2]Does not satisfy minimum completeness
µg/m3 – 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 2024b; EPA 2024

4.3.5 Thresholds of Significance

A Project would result in significant impacts 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 in 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.

4.3.5.1 Colusa County Air Pollution Control District

The CCAPCD has not developed air quality thresholds of significance. Action CON-2F states the County should coordinate with the APCD to develop thresholds associated with construction activities and to develop BMPs to be implemented during construction. The CCAPCD has not yet developed these, but has recommended using significance thresholds adopted by the Butte County Air Quality Management District (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 and amended in 2024 (BCAQMD 2024). The BCAQMD Guidelines have air quality thresholds of significance for criteria pollutants and TACs, shown below in Table 4.3-4, BCAQMD Air Quality Thresholds of Significance – Criteria Pollutants.

Table 4.3-4. BCAQMD Air Quality Thresholds of Significance – Criteria Pollutants

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

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 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 CEQA, CalEEMod was used to quantify emissions for comparison to air quality thresholds of significance.

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 PM2.5 increase greater than 0.3 µg/m3 annual average

4.3.6 Methodology

Air pollutant emissions associated with the Project would occur over the short term (i.e., 11 months) due to 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 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 7 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 presence of 5–30 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 facilities, such occasions would likely occur infrequently. The expected maintenance would generate little traffic during operations. Both scenarios were considered in this analysis. 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.

4.3.6.1 Construction

The projected construction schedule and anticipated construction equipment and vehicles were used to determine emissions. The construction will occur in the five main phases listed below in Table 4.3-5, Construction Schedule.

Table 4.3-5. 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 11 months, starting in approximately July 2025. 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 Solar Facility has been designed to primarily 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, as well as commissioning and testing. The final stage includes road paving. Table 4.3-6 shows the construction equipment and vehicle trips associated with each stage.

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

Table 4.3-6. 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		
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		

Construction Phase	Equipment			Average / Peak Daily Worker Vehicle Round Trips	Average / Peak Daily Vendor / Haul Truck Round Trips
	Equipment Type	Quantity	Usage Hours		
	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

4.3.6.2 Operation

Emissions during the operational period would be minimal, resulting 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. Only occasional, on-site maintenance is expected to be required following commissioning. On intermittent occasions, the presence of 5–30 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.

4.3.6.3 Emission Calculation Assumptions

On-Road Equipment Assumptions:

- Trip lengths reflect trips between the Project and major commercial centers and ports.
- Exhaust emissions for on-road equipment were calculated using CalEEMod for years 2025 and 2026.
- 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 4.3-6.

Off-Road Equipment Assumptions

- Exhaust emissions were calculated using the CalEEMod for years 2025 and 2026.
- Fugitive dust emissions were estimated for grading activities and truck loading using CalEEMod.
- Water trucks were modeled as on-site trucks using default CalEEMod emission factors.
- A list of the types and quantity of construction equipment is provided in Table 4.3-6.

Construction Information and Assumptions

Construction-related emissions are based on the following:

- The proposed Project site is approximately 886 acres, approximately 666 acres of which would be utilized for the Project. Approximately 13 acres will require excavation and grading. As a conservative estimate, the CalEEMod default value of 36 acres was used.

- Mobilization of the construction equipment may occur in the open spaces of the shared facilities area. Equipment and vehicle travel may also occur within the 886-acre Project site and the shared facilities area during the construction period.
- Construction activity is expected to last approximately of 11 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.

4.3.6.4 Ambient Air Quality Analysis

Air quality impacts from diesel particulate matter (DPM, represented by exhaust $PM_{2.5}$) were assessed using AERMOD v23132. Construction equipment emissions were simulated as a single area source covering the Project site. The modeling inputs are summarized below:

- AERMOD was executed with the U.S. EPA regulatory default option.
- Five years of meteorological data (2015–2019) comprised of Oroville, California surface observations with concurrent upper air data from Oakland, California were obtained from BCAQMD in AERMOD-ready processed format. This meteorological data set was used to estimate the maximum 5-year average concentration by the refined AERMOD modeling to best represent an annual average predicted concentration that can occur considering varying hourly meteorology over a 5-year period.
- Receptors were placed along the property fence line at 20-meter intervals. A nested grid of receptors was developed using the following spacing: 100-meter spacing out to 2,000 meters, and 1,000-meter spacing out to 20,000 meters in accordance with the 2015 Office of Environmental Health Hazard Assessment's (OEHHA's) Air Toxics Hot Spots Program Risk Assessment Guidance (OEHHA 2015). Additionally, discrete receptors were placed to capture DPM concentrations at select points of interest. These include residences, off-site worker locations and sensitive receptors.
- Receptor elevations were determined by using National Elevation Data processed with the AERMAP v18181 terrain preprocessor.
- The area source was characterized to have a release height of 2.55 meters with an initial vertical dimension of 2.37 meters (EPA 2012). Annual mitigated construction equipment emissions were determined from CalEEMod and assigned to the area source. The HROFDAY factor in AERMOD was used to reflect the construction schedule (7:00 AM–7:00 PM Monday through Friday and 8:00 AM–8:00 PM on weekends).

4.3.6.5 Health Risk Assessment

A health risk assessment (HRA) was conducted for Project construction emissions using HARP2 based on values from AERMOD. Therefore, the discussion of dispersion modeling input parameters in the Ambient Air Quality Analysis section above also applies to the HRA. As per the OEHHA Risk Assessment Guidance (OEHHA 2015), it is recommended to include the following types of receptors in HRAs:

- Point of Maximum Impact (PMI),
- Maximally Exposed Individual Resident (MEIR),
- Maximally Exposed Individual Worker (MEIW), and
- Sensitive Receptors (e.g., schools, day care centers, elder care centers, hospitals, etc.).

Although only two residences (one near the Project's southwest corner and one near the project's gen-tie corridor) are located inside the 1,000-foot radius from the Project boundary (see Figure 4.3-1), this analysis includes residences and sensitive receptors identified in Section 4.3.1.3, as well as additional off-site worker receptor locations. The point of maximum impact is expected to occur at the project boundary due to the near-surficial release height of the vehicle exhaust. The OEHHA default values for fraction at home, breathing rates etc., were used for exposure calculations in HARP2. Since operational activities would be limited to routine inspection and maintenance, which would have negligible emissions, no quantitative HRA was performed. Electronic HARP2 files are provided in Appendix D, Air Quality and Greenhouse Gas Technical Report.

4.3.7 Impacts Analysis

IMPACT 4.3-1: *Would the project conflict with or obstruct implementation of the applicable air quality plan?* **(Less Than Significant Impact with Mitigation Incorporated)**

A project is conforming if it complies with all applicable air district rules and regulations, proposed control measures, and is consistent with the growth forecasts in the applicable plan. The Project would not conflict with existing land uses or result in population growth. CCAPCD Rule 200 (nuisance conditions) is applicable to the Project. 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 annual significance threshold. However, with the incorporation of Tier 4 engines for offroad equipment greater than 25 HP, as proposed in mitigation measure **AQ-1**, 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 include 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 4.3-7, 4.3-8, and 4.3-9.

As previously discussed, the Project also aligned with policies CON 2-2 and 2-3 of the Colusa County General Plan. Therefore, the project will comply with all applicable rules and regulations. As such, impacts will be less than significant.

IMPACT 4.3-2: *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?* **(Less Than Significant Impact with Mitigation Incorporated)**

Construction

Construction emissions are summarized in Tables 4.3-7 and 4.3-8. The Project is located within a nonattainment region 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 measures **AQ-2** and **AQ-3** would be required on site 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. The 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 D, Air Quality and Greenhouse Gas Technical Report.

Table 4.3-6. 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						
2025	0.71	6.10	10.02	0.01	2.29	0.55
2026	0.44	3.70	6.52	0.01	1.08	0.30
Mitigated						
2025	0.36	3.40	10.68	0.01	2.10	0.40
2026	0.23	2.24	6.87	0.01	1.00	0.23
BCAQMD Threshold	4.5	4.5	--	--	--	--
Threshold Exceeded?	No	No	No	No	No	No

Table 4.3-7. 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	9.84	91.67	171.04	0.27	37.60	8.02
Mitigated	5.45	61.03	177.41	0.27	35.44	6.41
BCAQMD Threshold	137	137	--	--	80	--
Threshold Exceeded?	No	No	No	No	No	No

Operation

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 4.3-9 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 D, Air Quality and Greenhouse Gas Technical Report.

Table 4.3-8. 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	1.96	2.83	5.57	0.01	0.13	0.10
BCAQMD Threshold	25	25	--	--	80	--
Threshold Exceeded?	No	No	No	No	No	No

Emissions data for Colusa County, obtained using CEPAM 2019SIP v1.02, were used for comparison with potential Project emissions. A summary of annual and daily emissions in Colusa County is provided in Tables 4.3-10 and 4.3-11, respectively. 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 0.045 percent, and 0.022 percent of the total County annual emissions in 2025 and 2026, respectively, and operational emissions to be 0.00043 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 0.047 percent and 0.024 percent of the County daily emissions in 2025 and 2026, respectively, 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}. The CCAPCD requires the use of the BCAQMD's daily and annual 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. Although the Project site is located in a non-attainment region 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.

Emissions Inventory for Colusa County: 2013- 2023

The comparison of the Project emissions to the area source Colusa 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 4.3-9. Colusa County Historical Region-Wide Annual Pollutant Emissions

Year / Source Type[1]		Emissions (tons/year)					
		NO_x	CO	ROG	SO_x	PM_{10}	$PM_{2.5}$
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
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
2021	Point	1,475.9	429.5	685.7	25.5	426.1	180.0
	All Other	1,497.0	18,801.0	20,269.8	132.7	5,627.3	1,996.6
2022	Point	1,457.0	427.2	671.5	25.3	429.9	180.1
	All Other	1,404.5	18,708.6	20,251.7	132.6	5,623.0	1,993.0
2023	Point	1,435.4	424.5	658.4	24.7	431.7	178.7
	All Other	1,321.0	18,640.8	20,238.8	132.5	5,620.5	1,990.8
Project Construction							
2025		3.40	10.68	0.36	0.01	2.10	0.40
2026		2.24	6.87	0.23	0.01	1.00	0.23
Project Operation		0.50	0.76	0.29	0.002	0.02	0.02

[1] All other sources include stationary aggregated, areawide, on-road mobile, other mobile, and biogenic for years 2013–2020. Beginning in 2021, all other sources include areawide, on-road mobile, other mobile, and biogenic.

Table 4.3-10. Colusa County Historical Region-Wide Daily Pollutant Emissions

Year / Source Type[1]		Emissions (tons/day)					
		NO_x	CO	ROG	SO_x	PM_{10}	$PM_{2.5}$
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
2021	Point	4.04	1.18	1.88	0.07	1.17	0.49
	All other	4.10	51.51	55.53	0.36	15.42	5.47
2022	Point	3.99	1.17	1.84	0.07	1.18	0.49
	All other	3.85	51.26	55.48	0.36	15.41	5.46
2023	Point	3.93	1.16	1.80	0.07	1.18	0.49
	All other	3.62	51.07	55.45	0.36	15.40	5.45

Year / Source Type[1]	Emissions (tons/day)					
	NO_x	CO	ROG	SO_x	PM_{10}	$PM_{2.5}$
Project Construction						
2025	0.009	0.029	0.001	<0.001	0.006	0.001
2026	0.006	0.019	0.001	<0.001	0.003	0.001
Project Operation	0.001	0.002	0.001	<0.001	<0.001	<0.001

[1] All other sources include stationary aggregated, areawide, on-road mobile, other mobile, and biogenic for years 2013–2020. Beginning in 2021, all other sources include areawide, on-road mobile, other mobile, and biogenic.

IMPACT 4.3-3: *Would the project expose sensitive receptors to substantial pollutant concentrations?* (Less Than Significant Impact with Mitigation Incorporated)

Construction

The use of combustion equipment in Project construction activities could result in elevated concentrations of DPM, which could lead to health impacts for nearby sensitive receptors. As stated previously, BCAQMD 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 $PM_{2.5}$). A HRA was performed to estimate the potential cancer and chronic risk (characterized by a hazard index) at the maximally exposed receptors. Acute risk was not evaluated since OEHHA has not established an acute Reference Exposure Level for DPM.

While HRAs generally focus on sensitive receptors (e.g., residences, schools, and hospitals), a full receptor grid surrounding the Project site was conservatively used. Table 4.3-12 summarizes the HRA results at the PMI, MEIR, MEIW and maximally exposed individual sensitive receptor.

Table 4.3-12. HRA for Mitigated Construction Emissions

Maximum Impact Receptor	Cancer Risk (Persons per Million)	Chronic Hazard Index	Receptor Coordinates (UTM NAD 83 Zone 10)	
			Easting (meters)	Northing (meters)
PMI	1.64	2.04E-03	562162.00	4326589.00
MEIR 1	0.34	4.18E-04	563523.00	4326392.00
MEIR 2	0.37	4.56E-04	561352.00	4328174.00
MEIR 3	0.21	2.62E-04	564143.00	4330100.00
MEIR 4	0.09	1.10E-04	562162.00	4326589.00
SR 1	0.01	1.20E-05	572581.00	4333193.00
SR 2	<0.01	1.00E-05	572606.00	4334093.00
SR 3	<0.01	1.00E-05	572804.00	4334125.00
MEIW 1	<0.01	3.40E-05	564144.00	4333548.00
MEIW 2	<0.01	1.40E-05	570497.00	4332064.00
MEIW 3	<0.01	3.20E-05	571703.00	4326731.00

As shown above, the cancer risk is expected to be below the 10 in one million BCAQMD threshold. Chronic risk (characterized by Hazard Index) is also expected to be below 1.0. Additionally, dispersion modeling conducted for the project indicates an annual maximum value of 0.01018 µg/m^3, which is well under the BCAQMD significance threshold of 0.3 µg/m^3. Mitigation measure **AQ-1** would further 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).

Operation

Operational emissions will be minimal and occur intermittently for Project maintenance purposes. 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 naturally 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 2024). Figure 4.3-2 presents a geologic map of the Project area, showing the location of ultramafic (serpentine rock).

Potential impacts resulting from a fire on the Project site, are discussed in sections 4.9, Hazards and Hazardous Materials, and Section 4.20, Wildfire.

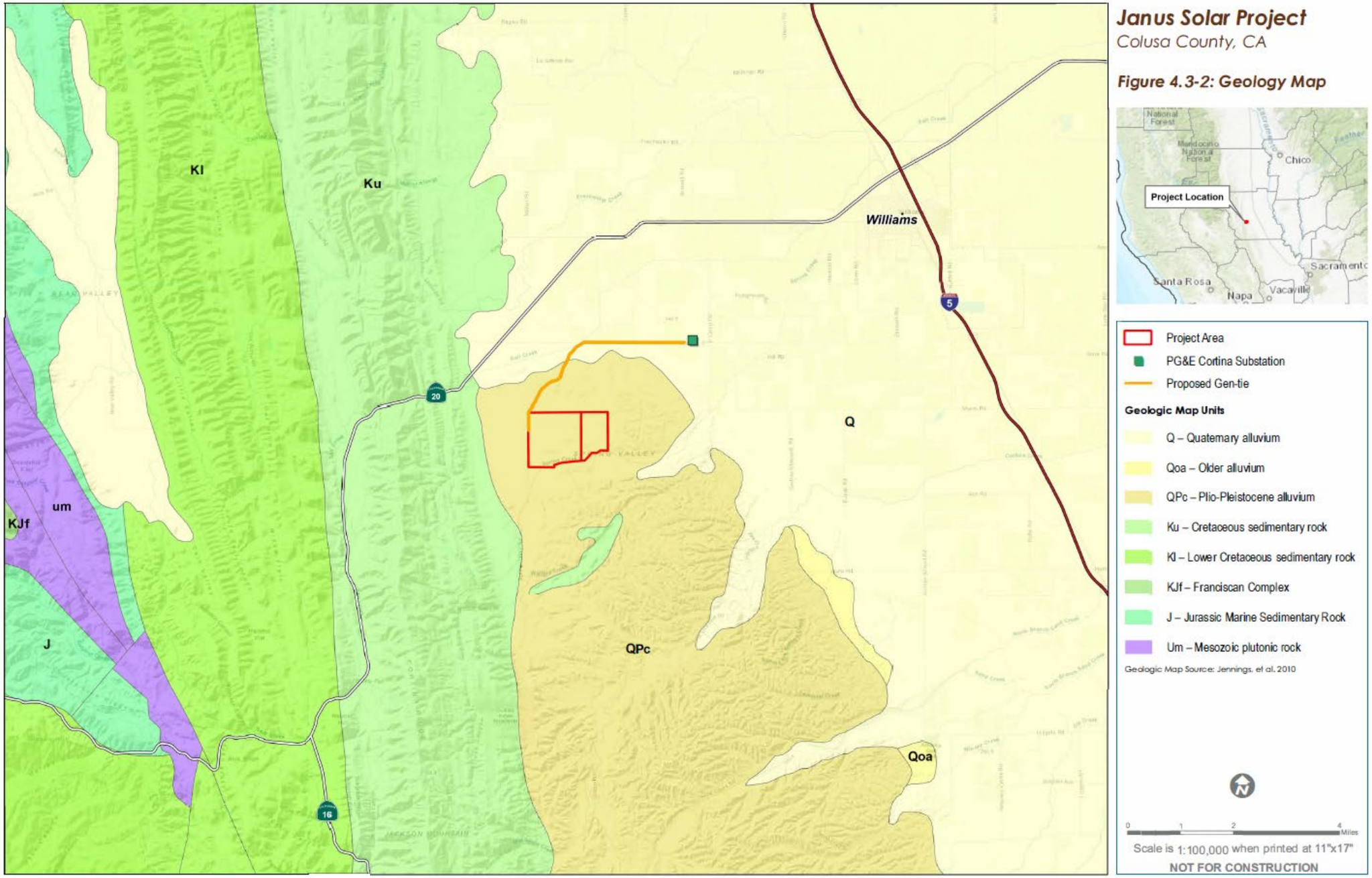

Figure 4.3-2. Geology Map

IMPACT 4.3-4: *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 used for cattle grazing, agriculture, and open space. The nearest residence not owned by the landowner of the Project site is approximately 100 feet to the south of the Project, with a second residence located about one-half mile west of the Project site. A third residence is located roughly 430 feet from the gen-tie line on Walnut Road and more than 1 mile north of the nearest site boundary. The remaining residences and other sensitive receptors are located more than 1,000 feet from the Project site. To the east, the nearest residence is just under two miles from the nearest site boundary. 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. Additionally, odors during construction would be minimized by the use of Tier 4 equipment. 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.

4.3.8 Mitigation Measures

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

AQ-1: 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.

AQ-2: Dust Control Measures

During construction of the Project, the primary construction contractor shall implement the following practices, which should limit daily dust emissions to well below the BCAQMD threshold of significance, and minimize impacts to surrounding areas, including adjacent orchards:

- 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 off site, 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.

- Apply dust suppressant in accordance with the manufacturer's application rate to Spring Valley Road, the unpaved road accessing the Project site, at least sixty (60) days and fifteen (15) before the start of construction and during the construction period, and as needed to reduce dust associated with truck traffic.
- Curtail construction activities when the County's Air Quality Index exceeds 150.
- Vehicle travel distances and total traffic on roads at the Project site and accessing the Project site shall be minimized through efficient planning and management. Special consideration must be given to minimizing the travel distances of heavy or heavily laden vehicles, particularly during the construction period.
- During anticipated peak truck trip periods of heavy equipment and vendor deliveries, a traffic control flagger shall be present on Spring Valley Road. The traffic flagger shall enforce the 15-mile-per-hour speed limit for heavy vehicles on unpaved roads and shall monitor and log dust conditions, per the requirements outlined below.
- Signage will be placed on Spring Valley Road describing the 15 mile per hour speed limit for heavy vehicles.
- The construction contractor is the designated dust control site coordinator and is responsible for implementing dust control. It is the dust control site coordinator's responsibility to:
    - Read and understand applicable mitigation measures and have them available at the job site.
    - Implement the mitigation measures and ensure that all employees, workers, and subcontractors know their dust control responsibilities.
    - Use contingency control measures when primary controls are ineffective.
    - Monitor the worksite for compliance with the dust control mitigation measures.
    - Maintain a daily log monitoring the implementation and effectiveness of the control measures, including off-site emissions due to material transport and other activities.
- Each day during construction, the construction contractor shall keep a daily log of dust conditions that includes the following information:
    - Date
    - Time
    - Wind speed
    - Temperature
    - Minutes off-site visible emissions were observed darker than 20 percent opacity, including date, time, location, and work activity
    - Soil conditions (damp, dry, etc.)
    - Corrective actions taken, if needed

AQ-3: Long Term Dust Control

Once a year during Project operations, generally in late spring, the Applicant shall be responsible for the application of dust suppressant to Spring Valley Road, the unpaved road accessing the Project site. The dust suppressant shall be applied on Spring Valley Road from the intersection with Walnut Drive to the entrance to the Project site. The timing of the application and the rate of

application shall be pursuant to the manufactures application rate and requirements and shall be to the satisfaction of the Public Works Director.

4.3.9 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

Through the implementation of mitigation measures **AQ-1**, **AQ-2**, and **AQ-3**, 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 improvements would also not expose any sensitive receptors to substantial pollutants or any objectional odors. Therefore, the PG&E Cortina Substation improvements would have no significant impact on criteria described for Impacts 4.3-1 through 4.3-4. No additional mitigation would be required.

4.3.10 Cumulative Impacts

The SVAB is considered the area of cumulative effects, and it is currently in non-attainment for PM_{10} per the California AAQS. 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 to sensitive receptors. As discussed in Impact 4.3-3, 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 odor impacts in the area.

4.3.11 References

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4.4 BIOLOGICAL RESOURCES

This section describes the biological resources[1] of the proposed Project site, as shown in Figure 2-1, and evaluates habitat conditions to determine the potential for occurrence of common and special status species[2] and their habitats[3]. The County received comments regarding Biological Resources during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA.

Special status plant species were defined in accordance with the CEQA Guidelines, Section 15380, and the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (California Department of Fish and Game, 2018), and include species that meet any of the following criteria:

- Federally or State-listed, or proposed for listing as rare, threatened, or endangered;
- Included on the CDFW "Special Plants" list; or
- Listed by the CNPS in the online version of its *Inventory of Rare and Endangered Plants of California*; species designated as List 4 by the CNPS were not considered based on CNPS guidance (CNPS 2020).

Special status wildlife species were defined in accordance with the CEQA Guidelines, Section 15380, and include species that meet the following criteria:

- Listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act;
- Listed or candidates for listing as threatened or endangered under the California Endangered Species Act; or
- Otherwise meet the definition of rare, threatened, or endangered as described in the CEQA Guidelines, Section 15380.

Information presented in this section is based on the reports included in Appendix E, *Biological Resources*, of this Draft EIR. Biologists from Tetra Tech conducted literature reviews and field surveys of the biological resources potentially associated with the Project site. Biologists visited the Project site in 2019, 2020, 2021, and 2024 and conducted the following surveys:

- Vegetation and habitat mapping;
- Rare plant surveys;
- Raptor nest surveys;

[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 or grows.

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

- Swainson's hawk (*Buteo swainsoni*) breeding season surveys;
- Protocol burrowing owl (*Athene cunicularia*; BUOW) burrow surveys;
- Protocol breeding season BUOW surveys[4];
- Focused habitat assessments and surveys for Crotch's bumble bee (*Bombus crotchii;* CBB); and
- Jurisdictional delineation of Waters of the United States (WOTUS), Waters of the State, and rivers, streams, or lakes regulated by the CDFW.

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

1. Biological Survey Report (Tetra Tech 2024a)
2. Swainson's Hawk Survey Report (Tetra Tech 2024b)
3. Burrowing Owl Survey Report (Tetra Tech 2024c)
4. Jurisdictional Delineation Report (Tetra Tech 2024d)

4.4.1 Existing Conditions

4.4.1.1 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.] 2024). This region experiences hot, dry summers, mild winters, and annual rainfall averaging roughly 5–25 inches. Elevation at the Project site ranges between approximately 144 to 331 feet. The Project site currently supports dry land cattle grazing and one pasture, depending on the time of year, is used for both grazing and grain cultivation for purposes of feeding cattle. 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. Standing water, drainages, potential wetlands, and riparian areas also occur within the Project site (Tetra Tech 2024a, 2024d).

4.4.1.2 Biological Study Area

During the field surveys, biologists surveyed the Biological Survey Area (BSA), defined as the Project site and an additional 150-meter buffer. Access was granted to all areas of the Project site, but portions of the 150-meter buffer were restricted due to private property. In these instances, these areas were assessed from public roads or adjacent Project parcels and with the use of binoculars.

4.4.1.3 Vegetation Communities

Vegetation communities were mapped within the BSA during the 2020 field surveys and updated in the spring of 2024 to accurately reflect the current site conditions. No CDFW sensitive natural communities were found within the BSA. All vegetated areas of the Project site have previously been or are currently used for grazing. Table 4.4-1 summarizes the vegetation communities and

[4] Protocol level winter season surveys for burrowing owl will be conducted during the winter of 2024-2025.

corresponding acreages within the BSA in the spring of 2024. The vegetation communities are shown in Figure 4.4-1. Descriptions of the communities are provided below.

The majority of the BSA consisted of non-native grasslands in the *Aegilops triuncialis* Provisional Herbaceous Semi-Natural Alliance. A semi-natural alliance 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, a large portion of the BSA consisted of cultivated tree rows, common wheat fields, open water at the Tehama Colusa Canal aqueduct, 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 (*Salix* sp.) 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 consisting of native northern California black walnut (*Juglans hindsii*), non-native pepper tree (*Schinus molle*), non-native elm (*Ulmus* sp.), and fan palm (*Washingtonia* sp.) in the southwestern portion of the site.

Table 4.4-1. Vegetation Communities, Spring 2024

Vegetation Communities	Acres within Biological Survey Area
Aegilops triuncialis Provisional Herbaceous Semi-Natural Alliance	810.9
Amsinckia menziesii – Achyrachaena mollis Herbaceous Alliance	286.0
Cultivated Tree Rows	244.5
Common Wheat Fields	166.2
Developed	33.5
Open Water	4.7
Salix gooddingii – Salix laevigata Forest and Woodland Alliance	14.1
Disturbed *Salix gooddingii – Salix laevigata* Forest and Woodland Alliance	9.0
Total acres	**1,568.9***

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

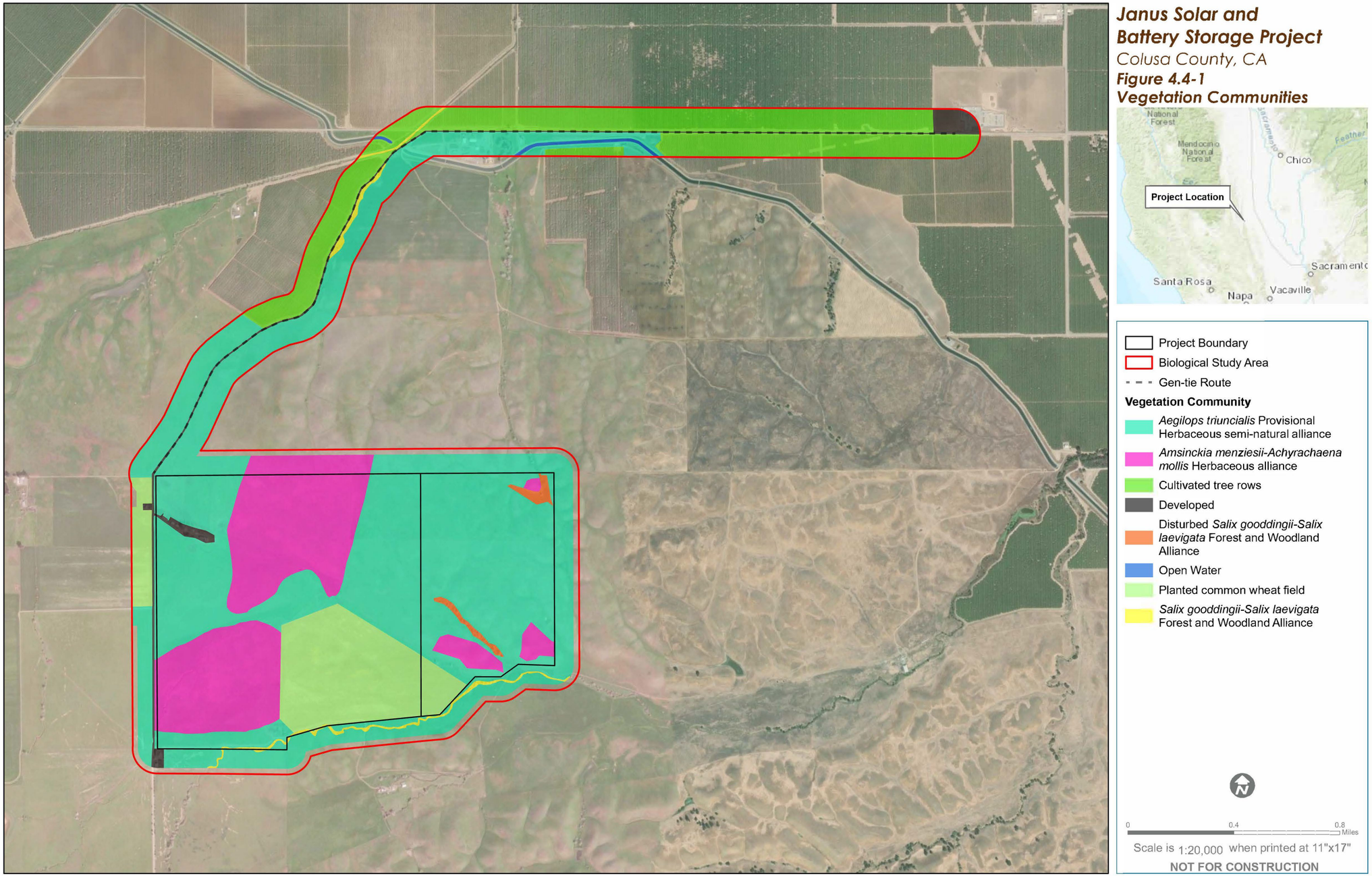


Figure 4.4-1. Vegetation Communities

***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 2024a, Cal-IPC 2024b). 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 2024c). 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 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.

Common Wheat Fields. These areas consisted of dense common wheat for the purposes of feeding cattle. Soils within this community are actively disked/tilled.

Developed. These areas included houses, barns/storage sheds, paved and dirt roads, the PG&E Cortina Substation, aqueduct infrastructure, and non-native ornamental species such as eucalyptus (*Eucalyptus* sp.) and rosemary (*Rosmarinus officinalis*).

Open Water. This area consisted of a fenced portion of the Tehama Colusa Canal aqueduct. Open water occurred within the 150-meter buffer surrounding the gen-tie.

***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 primarily occurred outside of the Project site. Within the Project site, this community occurred in a drainage in the southernmost portion, running along the site boundary. The drainage ranged from approximately 5 to 15 feet wide, a defined bed and bank was present throughout, and standing water and wet soils were observed. Wetland hydrology and hydrophytic vegetation were also present (Tetra Tech 2024d).

***Disturbed Salix gooddingii – Salix laevigata* Forest and Woodland Alliance**. This native riparian community was similar to the community 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 in 2020 and 2024. 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. Wetland hydrology was present in this area (Tetra Tech 2024d).

In the southeast portion of the Project site, plant species in this community included native willows and native Fremont cottonwood. No standing water or mud was observed in 2020, but 1 inch of standing water was observed in a small area in 2024. Based on the depth of cattle footprints in the area, it appeared that the ground is wet for part of the year. A defined bed and bank were not observed in this area. 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.

4.4.1.4 Plants and Wildlife

The proposed Project site may support an assortment of plants and wildlife and provide shelter, cover, roosting, foraging, and breeding habitats to mammals, birds, invertebrates, reptiles, and amphibians as year-round residents, seasonal residents, and/or migrants. However, the Project site supports low quality wildlife habitat due to regular disturbances from cattle grazing and grain cultivation and lack of complex vegetation communities. During the field surveys, 102 native and non-native plant species, six mammals, 39 birds, seven invertebrates, four reptiles, and three 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 2024a).

Special Status Species

Special status species are plants or wildlife species that require special consideration and/or protection at the state and/or federal levels due to their rarity or risk of becoming threatened, endangered, or extinct. A literature review was conducted by Tetra Tech in 2024 of the Salt Canyon (3912213) U.S. Geological Survey (USGS) 7.5-minute quadrangle, and the eight surrounding quadrangles, including Manor Slough (3912223), Williams (3912222), Cortina Creek (3912212), Glascock Mtn. (3812283), Leesville (3912224), Wilbur Springs (3912214), Rumsey (3812282), and Wilson Valley (3812284) (CDFW 2024a, CNPS 2024). In addition, species identified in the CDFW and CNPS and Defenders of Wildlife comment letters regarding the Project's Notice of Preparation were analyzed. Species were assessed for their potential to occur within the Project site by comparing their general distributions with the Project's location. Biologists then evaluated whether the Project site contains suitable habitats to support each species. For those species identified in the literature review, biologists determined the potential for each to occur within the Project site. Table 4.4.2 presents the special status species observed on the Project site during the field surveys, those with moderate to high potential to occur on the site, or those identified as species of concern in the CDFW and CNPS and Defenders of Wildlife comment letters that were submitted for the Project.

Table 4.4-2. Special Status Species

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Habitat	Potential to Occur
Plants					
Amsinckia lunaris	Bent-flowered fiddleneck	None	1B.2	Cismontane woodland, Coastal bluff scrub, Valley and foothill grassland.	**Low**. While there are three known occurrences within the Salt Canyon quadrangle, the Project site contained primarily non-native grasslands and common wheat fields and is actively grazed. This species was not found during the rare plant surveys that were conducted during the blooming period. Therefore, potential to occur is low. There is one CNDDB occurrence within 5 miles of the BSA, located approximately 2.5 miles to the northwest.
Astragalus tener var. *ferrisiae*	Ferris' milk-vetch	None	1B.1	Meadow and seep, Valley and foothill grassland, Wetland.	**Low.** While this species is known to occur within 5 miles of the Project site, non-native grassland and wetland habitat and drainages on the site were highly disturbed due to consistent active grazing. This species was not found during the rare plant surveys that were conducted during the blooming period. Therefore, potential to occur is low. There is one CNDDB occurrence within 5 miles of the BSA, located approximately 4.1 miles to the west.
Sidalcea keckii	Keck's checkerbloom	Endangered	1B.1	Cismontane woodland, Ultramafic soils, Valley and foothill grassland.	**Low**. While there is one known occurrence within the Salt Canyon quadrangle, the Project site contained primarily non-native grasslands and common wheat fields and is actively grazed. This species was not found during the rare plant surveys that were conducted during the blooming period. Therefore, potential to occur is low. There is one CNDDB occurrence within 5 miles of the BSA, located approximately 4 miles to the southwest.
Invertebrates					
Bombus crotchii	Crotch's bumble bee	None	Candidate Endangered	Open grasslands and shrublands. Nests in underground abandoned rodent burrows.	**Observed.** The BSA mainly consists of open grassland habitat, with some shrublands present. Floral resources are present in patches throughout the BSA. Five individuals were observed during focused habitat assessments and surveys for the species, but no nesting sites were found. Nesting habitat, including bare ground, rodent burrows, rock piles, and fallen logs, occurs on site.

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Habitat	Potential to Occur
Birds					
Agelaius tricolor	Tricolored blackbird	None	Threatened	Historically nested in wetlands with cattails, bulrushes, and willows, but has also been observed nesting in triticale fields especially those with invasive mustard and blackberry brambles in proximity to stock ponds and irrigated pastures. Forages in cultivated fields and wetlands.	**Low.** Suitable nesting habitat is not present within the Project site due to the absence of suitable wetlands and triticale fields, and regular disturbance in the form of grazing and disking/tilling. Species may forage within or occasionally flyover the Project site. There is one CNDDB record within 5 miles of the BSA. This record is approximately 4.6 miles away.
Athene cunicularia	burrowing owl	None	SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation.	**Moderate.** BUOW were not observed during the protocol 2024 breeding season surveys, but suitable habitat in the form of small mammal burrows is present in discrete locations of the BSA. Winter protocol surveys will be completed during the 2024–2025 winter. There are two CNDDB occurrences within 5 miles of the BSA, with the nearest located 1.8 miles to the northeast.
Buteo swainsoni	Swainson's hawk	None	Threatened	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees.	**Observed.** Foraging habitat and preferred nesting habitat of solitary or small groves of trees near agricultural fields are present on the Project site. Two adult Swainson's hawks were observed within the Project site in 2020. Two other adult Swainson's hawk sightings occurred in May 2024. In 2024, six active Swainson's hawk nests were observed within a 10-mile buffer, however no Swainson's hawk nesting was observed within the BSA. There are no CNDDB occurrences within 5 miles of the BSA.
Circus hudsonius	northern harrier	None	SSC	Wetlands, grasslands, fields, estuaries, open floodplain, and marshes. This species nests on the ground (The Cornell Lab 2024).	**Observed.** Two northern harriers were observed flying overhead in November 2019, approximately three harriers were observed in 2020, and one individual was observed in 2024. Nesting is not likely on the Project site, as this species is not tolerant of disturbance, such as heavy grazing and disking/tilling (The Cornell Lab 2024). There are no CNDDB occurrences within 5 miles of the BSA.
Falco columbarius	merlin	None	None/WL	Open forests and grasslands (The Cornell Lab 2024).	**Observed.** One merlin was observed perching in the Project site in November 2019. Merlin nesting does not occur in California (The Cornell Lab 2024). There are no CNDDB occurrences within 5 miles of the BSA.

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Habitat	Potential to Occur
Falco mexicanus	prairie falcon	None	None/WL, BCC	Inhabits dry, open level or hilly terrain. Nests in steep cliffsides.	**Observed.** One prairie falcon was observed foraging and perching in the vicinity of the Project site in 2020. This species is unlikely to nest within the Project site because cliff/bluff nesting habitat is not present on the site. There are no CNDDB occurrences within 5 miles of the BSA.
Lanius ludovicianus	loggerhead shrike	None	SSC	Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**Observed.** Individuals of this species were observed foraging and perching in the vicinity of the Project site in 2019, 2020, and 2024. The Project site provides only limited potential nesting sites (i.e., trees and shrubs) and is heavily disturbed by consistent active grazing. There are no CNDDB occurrences within 5 miles of the BSA.
Plegadis chihi	white-faced ibis	None	None/WL	Nests in dense, freshwater emergent wetland, extensive marshes, and rarely in trees, but no longer breeds regularly anywhere in California (CDFG 2005a). Forages in freshwater emergent wetland, shallow lakes, muddy ground of wet meadows, and irrigated or flooded pastures and croplands.	**Observed.** Numerous individuals of this species were observed in 2021 and 2024 foraging in grasslands within the Project site. 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. There are no CNDDB occurrences within 5 miles of the BSA.
Mammals					
Taxidea taxus	American badger	None	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	**Moderate.** American badger was not observed during the surveys and no potential burrows/dens were found in the BSA, however, the grasslands provide suitable habitat. Culverts of sufficient size, along existing roads within the BSA may be used by this species for refuge or to pass safely beneath roads. There are 2 CNDDB occurrences in 5 miles of the BSA with the closest approximately 1.5-mile northwest.
Amphibians					
Rana boylii	Foothill yellow-legged frog – North Coast Distinct Population Segment	None	SSC	Foothill and mountain streams. Occurs in a wide variety of vegetation types including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, mixed chaparral and wet meadows.	**Low.** The only marginally suitable habitat for this species is within Salt Creek along the gen-tie line. However, this creek lacks suitable riparian coverage for this species and suitable adjacent vegetation types. There is one CNDDB occurrence within 5 miles of the BSA, located approximately 4 miles to the south.

Scientific Name	Common Name	Federal Status	State Status/ Other Status	Habitat	Potential to Occur
Spea hammondii	western spadefoot	Proposed Threatened	SSC	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg laying.	**Moderate.** The Project site consists of grassland habitat and has multiple drainages that may serve as habitat for the western spadefoot. There are no CNDDB occurrences within 5 miles of the BSA.
Reptiles					
Thamnophis gigas	giant gartersnake	Threatened	Threatened	Freshwater marsh and low gradient streams. Adapted to drainage canals and irrigation ditches.	**Low to Moderate.** There is a low potential for this species to occur within the Project site as aquatic features with emergent vegetation are absent from the site. Salt Creek and the Tehama Colusa Canal are the only suitable aquatic habitat in the Project vicinity. There is a moderate potential for this species to occur near these features, along the gen-tie line. The nearest CNDDB occurrence is approximately 4 miles northwest of the BSA.

Notes: 4.2 = California Native Plant Society watch list; CNDDB = California Natural Diversity Database; 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.

Special Status Plants

Bent-flowered fiddleneck, Ferris' milk-vetch, and Keck's checkerbloom were determined to have a low potential to occur due to marginal or low quality habitat for the species. This is largely due to disturbed non-native annual grasslands being the primary habitat within the Project site, and other habitats are similarly disturbed and grazed. These species and other special status plants were not observed during protocol-level rare plant surveys conducted for the Project. Therefore impacts to special-status plants are not anticipated from this Project, and special-status plants will not be discussed further in this document.

Crotch's Bumble Bee

The CBB is a California candidate species. These social insects live in colonies composed of a queen, workers, and reproductive individuals (males and new queens) (Hatfield et al. 2015). CBB have a colonial life cycle, meaning the colonies are annual, and only the new, mated queens overwinter. CBB are active from February through October (CDFW 2023). Queen bees emerge from overwintering in late February, peaking in April, with a second pulse in July and ending in late-October. From late-March through September the colony, consisting of males and worker bees, remains active (The Xerces Society 2018, CDFW 2023).

CBB occur in grasslands and shrublands, and species overwinter in soft, disturbed soil or under debris such as leaf litter (CDFW 2023). In early spring, after overwintering, the queen bee emerges and begins foraging and searching for a suitable colony nesting site. CBB do not dig or make their own nests, but primarily nest underground in abandoned small mammal burrows, downed debris, such as woody cover, brush piles, or fallen logs, and man-made structures such as rock walls (CDFW 2023, Williams et al. 2014). The CBB is a foraging generalist that feeds on a variety of widely distributed plant genera, including sages (*Salvia* spp.), lupines (*Lupinus* spp.), medics (*Medicago* spp.), phacelias (*Phacelia* spp.), and milkweeds (*Asclepias* spp.) (Koch et al. 2012, Williams et al. 2014).

Five individual CBB were observed during focused habitat assessments and surveys for the species conducted in 2024. The Project site offers suitable patches of floral resources for nectaring, and bare ground, rodent burrows, rock piles, fallen logs, and debris piles that may be used for nesting or overwintering; however, the majority of the site has low suitability due to poor-quality habitat. Habitat quality for the species within the BSA is shown in Figure 4.4-2. No nesting sites were observed during the surveys. There are no California Natural Diversity Database (CNDDB) occurrences of this species within 5 miles of the Project site (2024a).

Tricolored Blackbird

The tricolored blackbird is a California State Threatened species. This is a highly social bird that nests in colonies and prefers dense cattail (*Typha* sp.) or bulrush (*Scirpus* or *Schoenoplectus* sp.) stands. They are also known to nest in triticale fields that have large amounts of invasive mustard (*Brassica* sp.) and mallows (*Malva* sp.), and within Himalayan blackberry (*Rubus armeniacus*), and thistles (*Circium* sp.) Tricolored blackbirds are known to forage over a wide area, with reports of foraging up to 9 kilometers from the nesting colony (UC Davis 2020).

There is no suitable nesting habitat within the BSA due to the regularly disturbance associated with grazing and disking/tilling, so this species is not anticipated to nest within the BSA. The Project site provides suitable foraging habitat, but occurrence of foraging is anticipated to be low due to distance to potentially suitable nesting habitat, and that this species was not observed

during biological surveys within the Project site. The nearest CNDDB occurrence for this species is approximately 4.6 miles northeast from the Project site (CDFW 2024a).

Burrowing Owl

The BUOW is a California Species of Special Concern and a USFWS Bird of Conservation Concern. There is currently a petition to list the Northern Central Valley population of BUOW (which includes populations within Colusa County) as threatened under the California Endangered Species Act (Center for Biological Diversity et al. 2024). While the outcome of this petition is not yet determined, it is possible that BUOW may become a listed or candidate species under the California Endangered Species Act prior to the start of construction.

The 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. The BUOW can occur in 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. There are two CNDDB occurrences of this species within 5 miles of the Project site (2024a).

The BSA contains suitable BUOW habitat due to low-growing grazed vegetation and agricultural use. The BUOW was not observed during protocol-level breeding season surveys in 2024. The absence of BUOW during the 2024 breeding season indicates that BUOWs do not use the Project site for breeding. Protocol winter season surveys are planned for winter 2024–2025 to determine if BUOW overwinter within the Project site.

During the 2024 protocol survey, 48 suitable burrows and 26 suitable surrogate burrows were observed within the BSA (Figure 4.4-3). Whitewash was found at nine burrows and three burrow surrogates. In addition, old owl pellets were observed in proximity to one burrow during the 2024 survey. Most whitewash observed was minor, and some burrows with whitewash were located next to a fence. While BUOW are the most likely bird species to utilize burrows on the Project site, whitewash could have been from other bird species utilizing the site. Additional details are provided in Appendix E, *Biological Resources* (Tetra Tech 2024c).

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 Mojave Desert (CDFW 2024b). Breeding habitat includes riparian, agricultural environments, oak savannah, and juniper-sage flats (CDFG 2006). In the Central Valley, Swainson's hawks nest in large trees in woodlands, as well as in roadside trees, trees along field borders, isolated trees, trees around farmhouses and farmyards, and in urban areas that are adjacent to cultivated lands. This species nests in California between March 1 and September 15. Swainson's hawk has become increasingly dependent on foraging in cultivated alfalfa fields and similar crops, as its natural foraging habitats are increasingly being converted into agricultural lands (CDFW 2024b). Populations of Swainson's hawk have declined due to the loss of suitable foraging and nesting habitat. There are no recorded occurrences of Swainson's hawk within 5 miles of the Project site (CDFW 2024a).

Swainson's hawk foraging habitat and preferred nesting habitat in the form of solitary or small groves of trees near agricultural fields is present within the BSA (The Cornell Lab 2024). Two adult Swainson's hawks were observed within the BSA in 2020 on the ground, perched on a cattle fence, and flying overhead. Foraging Swainson's hawks were also observed in the BSA in 2024 on two separate occasions. Both observations in 2024 involved individuals that were flying above the BSA.

In 2024, Tetra Tech completed a Swainson's hawk foraging and nesting survey which included identifying Swainson's hawk and other raptor nests within a 10-mile survey area around the Project Site (Tetra Tech 2024b). In 2024, six active Swainson's hawk nests were observed within the 10-mile buffer, each located more than 5 miles from the Project site (Tetra Tech 2024b; Figure 4.4-4). The location of these nests and additional details are provided in Appendix E, *Biological Resources* (Tetra Tech 2024b; Figure 5).

Northern Harrier

The northern harrier is a California Species of Special Concern. It ranges widely from northern Alaska to Baja California (Shuford et al. 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 al. 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 al. 2008).

Because this species is not tolerant of disturbance when nesting, which includes grazing and disking/tilling (The Cornell Lab 2024), nesting is not likely to occur within the BSA. However, the grasslands and croplands within and surrounding the BSA provide foraging habitat for this species. Northern harriers were observed in the BSA in 2019, 2020, and 2024. Two northern harriers were observed flying overhead in 2019; three harriers were observed in the field surveys conducted in 2020; and one individual was observed foraging in 2024. There are no CNDDB occurrences of this species within 5 miles of the Project site (2024a).

Merlin

The merlin is a CDFW Watch List species. The merlin is an uncommon winter migrant in California from September to May in open grasslands, savannas, woodlands, lakes, wetland edges, and early successional stage habitats. Merlins breed in open and semi-open areas across northern North America, primarily in Canada and Alaska (The Cornell Lab 2024). One merlin was observed perching on the Project site in November 2019. The grasslands on site provide suitable foraging habitat for this species. However, this species would not nest at the Project site due to seasonal migration patterns. There are no CNDDB occurrences of this species within 5 miles of the Project site (2024a).

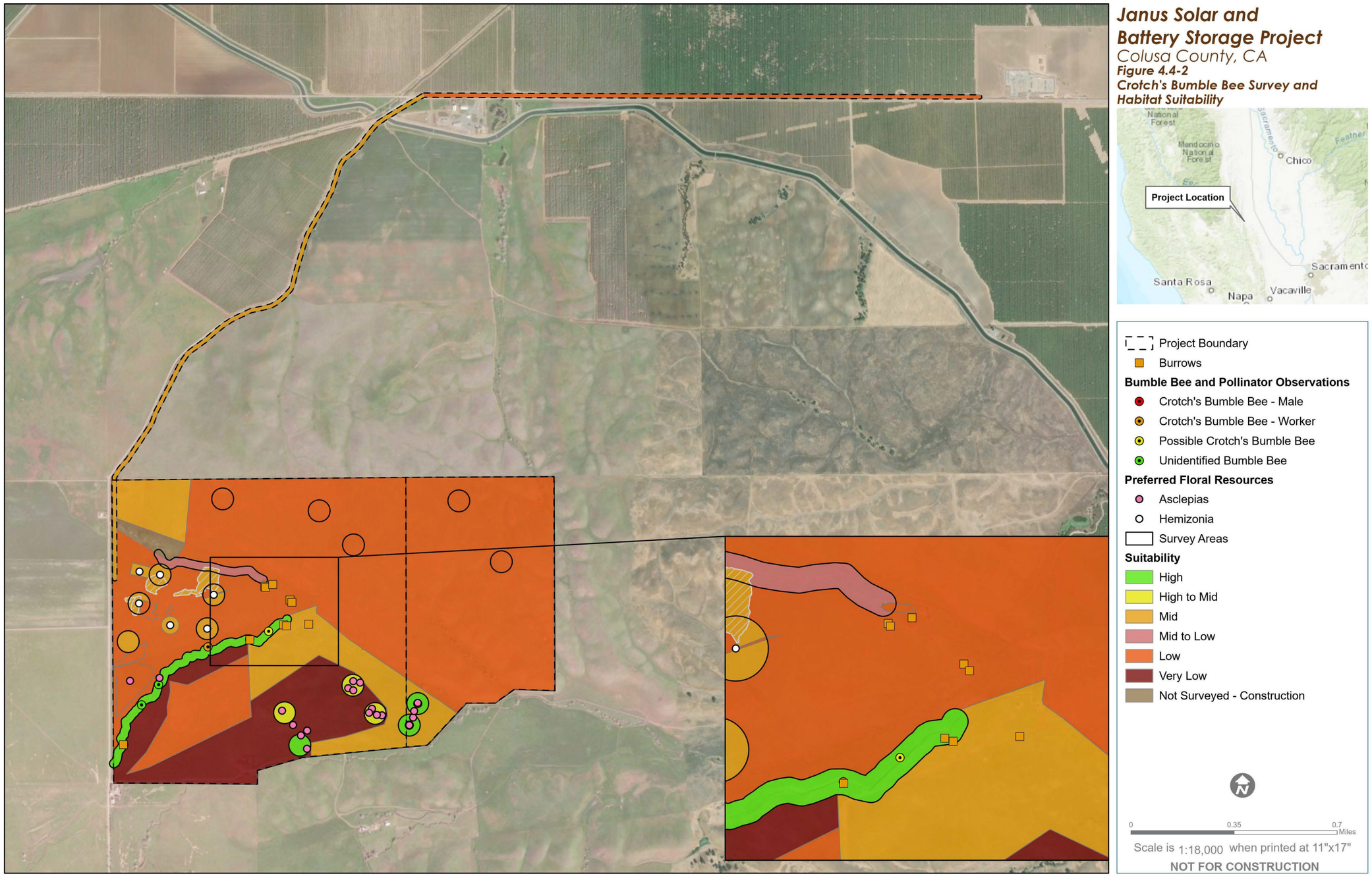


Figure 4.4-2. Crotch's Bumble Bee Survey and Habitat Suitability

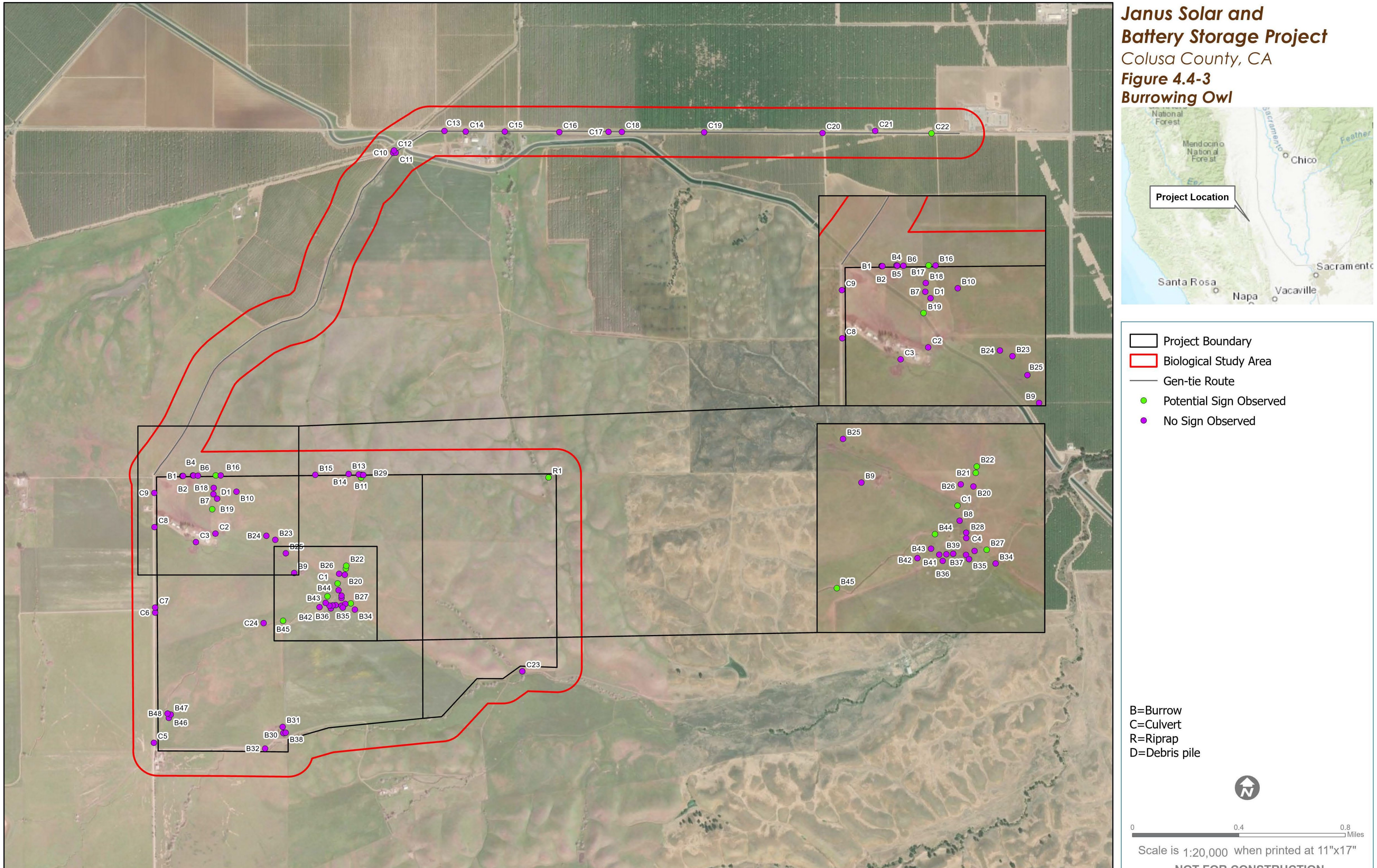
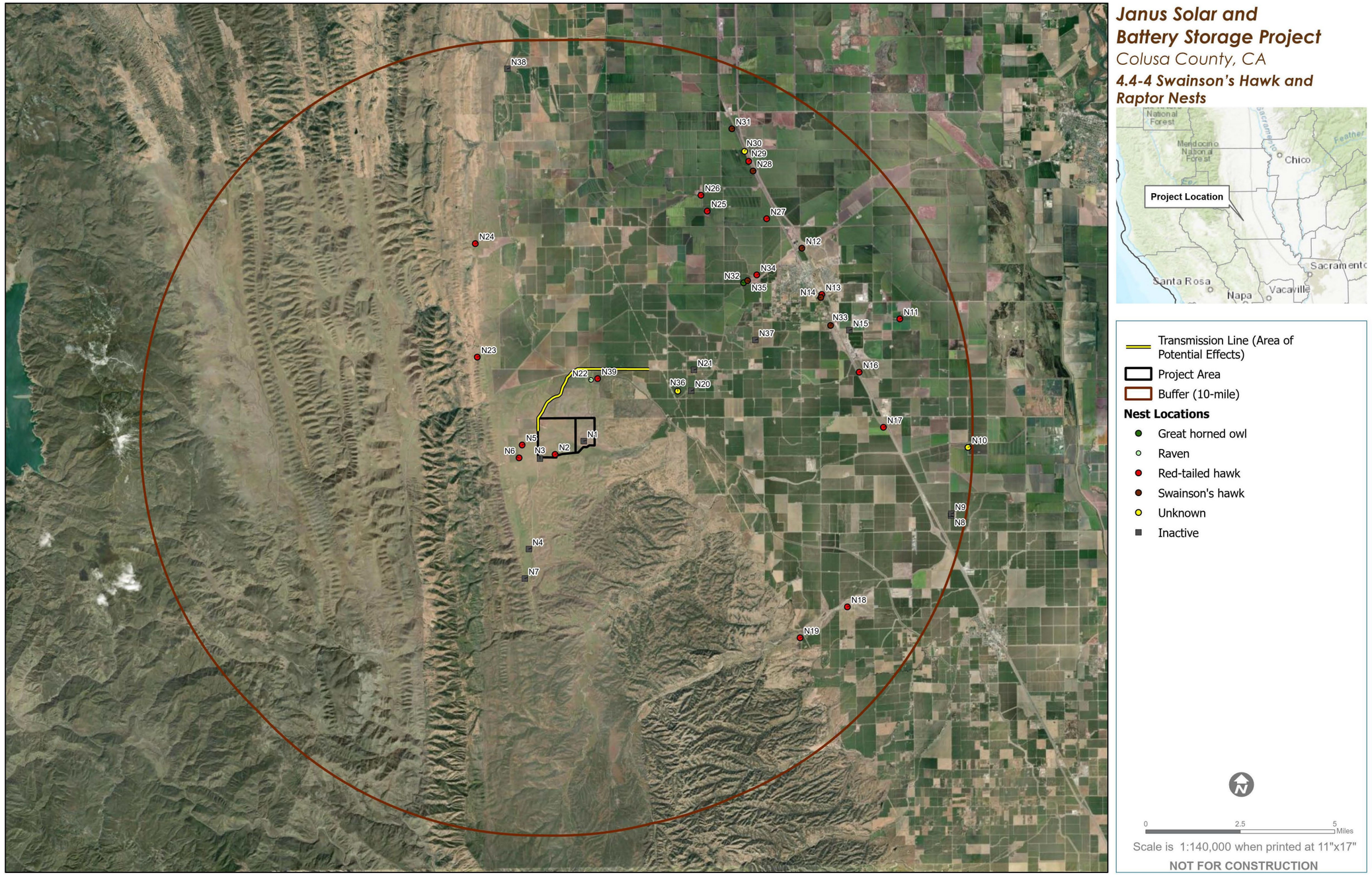


Figure 4.4-3. Burrowing Owl



Janus Solar and Battery Storage Project

Colusa County, CA

4.4-4 Swainson's Hawk and Raptor Nests

Transmission Line (Area of Potential Effects)
Project Area
Buffer (10-mile)

Nest Locations

- Great horned owl
- Raven
- Red-tailed hawk
- Swainson's hawk
- Unknown
- Inactive

0 2.5 5 Miles

Scale is 1:140,000 when printed at 11"x17"

NOT FOR CONSTRUCTION

Figure 4.4-4. Swainson's Hawk and Raptor Nests

Prairie Falcon

Prairie falcon is a USFWS Bird of Conservation Concern. It ranges from southeastern deserts throughout the Central Valley toward the inner Coast Ranges and the Sierra Nevada (CDFG 2005b). Prairie falcons prefer environments that include perennial grasslands, savannahs, rangeland, agricultural fields, and desert scrub (CDFG 2005b). They require sheltered cliff ledges for nesting.

The grasslands within the BSA provide suitable foraging habitat for this species. However, its preferred nesting habitat is not found within the BSA. There are no CNDDB occurrences of this species within 5 miles of the Project site (CDFW 2024a); one prairie falcon was observed foraging and perching on site during the 2020 field surveys.

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 (Shuford et al. 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 (Shuford et al. 2008). They use tall trees, fences, or utility lines as hunting perches, and sharp, thorny, multi-stemmed plants and barbed wire fences for impaling prey or to use for storage (Shuford et al. 2008). Shrikes are found most frequently in riparian woodland, chaparral, oak woodland, oak savannah, and desert scrub (Shuford et al. 2008).

Several loggerhead shrike individuals were observed foraging and perched within the BSA in 2019, 2020, and 2024; however, no nests were found. The BSA 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 and 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.

This species no longer nests regularly in California (CDFG 2005a). There are no CNDDB occurrences of this species within 5 miles of the Project site (CDFW 2024a). Although several white-faced ibis were observed foraging in the BSA in 2021 and 2024, no nests were found. Foraging habitat is limited within the BSA, and preferred nesting habitat (dense, freshwater emergent wetlands and extensive marshes) is not present.

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 burrows in loose soil. Their diet consists of small mammals such as ground squirrels.

No American badgers and no large suitable underground holes or potential burrows/dens were observed in the BSA. Culverts of sufficient size were found within the BSA that could be used as refuge or allow badgers to pass safely beneath roads. The grasslands present on the site provide

suitable foraging grounds for this species and there are two recorded occurrences of this species within 5 miles of the Project site (CDFW 2024a).

Foothill Yellow-Legged Frog

The north coast distinct population segment of Foothill yellow-legged frog is a CDFW Species of Special Concern. This species lives in foothill and mountain streams from the Pacific Coast to the western slopes of the Sierra Nevada and Cascades mountains, up to approximately 5,000 feet in elevation. They occur in a wide variety of vegetation types including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, mixed chaparral and wet meadows. They are closely associated with streams and are rarely observed far from the water's edge. Breeding stream habitat is typically shallow, rocky and at least partially exposed to direct sunlight (USFWS 2023a).

No foothill yellow-legged frogs were observed in the BSA during field surveys, and no suitable aquatic habitat for this species is found within the Project site. There is marginal to low quality habitat present within Salt Creek along the gen-tie line, but habitat associated with Salt Creek within the vicinity of the BSA is only marginally suitable for the species as it lacks dense riparian habitats and other suitable vegetation. There are no CNDDB occurrences of this species within a 5-mile buffer of the Project site.

Western Spadefoot

The western spadefoot is a CDFW Species of Special Concern and a federally proposed threatened species. The western spadefoot occurs in valley foothill grasslands, open chaparral, pine-oak woodlands, and lower montane and mixed conifer forests within open areas comprised of short grasses. Western spadefoots have two distinct habitat requirements including slow moving streams or seasonal pools for breeding, and uplands for foraging and dry-season aestivation (Stebbins 2003). Western spadefoot toad eggs and larvae have been observed in a variety of permanent and temporary wetlands, including rivers, creeks, pools in intermittent streams, vernal pools, artificial ponds, livestock ponds, irrigation and roadside ditches (USFWS 2023b).

No western spadefoot toads were observed in the BSA during the field surveys. The aquatic features on-site are highly disturbed but may provide breeding opportunities for this species when water is present. In addition, the grasslands within the Project site may provide suitable foraging and dispersal habitat. There are no CNDDB occurrences of this species within a 5-mile buffer of the Project site.

Giant Garter Snake

The giant garter snake is a state and federally threatened species. The giant garter snake inhabits marshes, sloughs, ponds, small lakes, low gradient streams, and agricultural-associated wetlands, such as irrigation and drainage canals and flooded fields, as well as the adjacent uplands from Butte to Fresno County (Halstead et al. 2021). Giant garter snakes are generally associated with permanent water deep enough to support aquatic prey species; with dense emergent aquatic vegetation, such as cattails and bulrushes; and in close proximity to upland areas, such as grasslands or valley oak woodlands, with suitable underground retreats such as rip-rap or small mammal burrows (USFWS 2017).

No giant garter snakes were observed within the BSA during the field surveys. The aquatic features on site are highly disturbed, lack emergent vegetation, and are mostly ephemeral. There is a low likelihood for this species to occur within the Project site due to the lack of suitable aquatic

features. However, Salt Creek and the Tehama Colusa Canal, which occur along the gen-tie route, provide moderately suitable aquatic habitat for this species. Therefore, there is a moderate potential for giant garter snakes to occur within or near these features. There is one CNDDB occurrence of this species within 5 miles of the Project site (CDFW 2024a).

Migratory Birds and Nests

Non-special status migratory birds and raptors protected under the federal Migratory Bird Treaty Act and the California Fish and Game Code have the potential to nest and forage in the Project site. Although limited, trees and shrubs in the Project site and vicinity, including the cultivated tree rows and willow woodlands, provide suitable habitat for tree- and shrub-nesting birds. Grasslands, although regularly disturbed, may also provide habitat for ground nesting birds. Electrical towers in the Project area provide suitable nesting habitat for raptors and some other birds, such as common raven (*Corvus corax*). The breeding season for migratory birds varies by species but generally extends from February through August. During the 2024 field surveys, one red-tailed hawk (*Buteo jamaicensis*) nest was observed in a tree in the southern portion of the Project site. In addition, one other inactive raptor nest was observed in a tree on the Project site, and one inactive raptor nest was observed approximately 0.03 mile south of the southwestern corner of the Project site. No other bird nests were observed during the 2024 field surveys.

Critical Habitat

The Project site is not located within designated final or proposed critical habitats for federally listed plant or wildlife species.

Wildlife Movement Corridors

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 CDFW Terrestrial Connectivity dataset summarizes terrestrial connectivity using 2.5 square mile (1,600 acres) hexagons to provide a broad overview wildlife corridors or linkages and the juxtaposition to large, contiguous, natural areas. The Project site and immediate surrounding areas are classified by CDFW’s Terrestrial Connectivity Areas of Conservation Emphasis as Rank 4 - Conservation Planning Linkages (CDFW 2024c). This designation indicates that the Project site and vicinity may provide habitat connectivity linkages that represent connections between core areas of natural habitat. These linkages have more flexibility than Rank 5 - Irreplaceable and Essential Corridors, which are expected to funnel or concentrate animal movement and represent the last available connection between two areas, making them the highest priority for conservation (CDFW 2024d). While the Project site and surrounding areas are assigned Rank 4, it is important to evaluate connectivity at a site-specific level.

Based on the current and historic grazing and agricultural use of the site, as well as the immediately surrounding areas which are heavily influenced by grazing and agriculture, limited opportunities for habitat continuity or wildlife movement are available due to the lack of natural habitat. In addition, the Project site is currently surrounded by barbed wire fencing, with additional barbed wire fencing throughout the interior of the Project site to separate cattle fields. This barbed wire fencing is anticipated to be an impediment to the movement of some wildlife. The existing barbed wire fencing would be replaced with metal fencing, 6–8 feet in height, along the site perimeter, as needed. Local wildlife may still disperse through the Project site following Project completion, and the Project is not anticipated to create any substantial additional barriers to dispersal.

The Project site also occurs within avian migration routes along western North America and may provide migratory bird stopover habitat. However, no evidence of the existence of a wildlife nursery site (e.g., rookeries for birds or maternal roosts for bats) was observed during field surveys.

Hydrology

The Project site is located in the Colusa Basin Watershed, which drains into the Sacramento River at Knights Landing via the Colusa Basin Drain (Colusa County Resource Conservation District 2012). Two creeks occur near the Project site: Spring Creek, which is adjacent to the Project site to the south, and Salt Creek, which is located approximately 1 mile north of the Project site near the gen-tie line. 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-sloped rolling hills.

A jurisdictional delineation was conducted in 2021 and 2024 for any potential jurisdictional features within the Project site (Tetra Tech 2024d). The 2024 delineation was conducted to update the 2021 results and to survey the gen-tie line and 250-meter buffer. A total of 15 potential jurisdictional aquatic features were found within the Project site, along the gen-tie line and/or within the 250-meter survey buffer (Tetra Tech 2024d). Potentially jurisdictional aquatic feature will be avoided during Project construction and operations. Therefore, there will be no impact to potentially jurisdictional aquatic features as a result of the Project.

Jurisdictional Delineation

In 2024, a total of 15 potential jurisdictional features were found within the Project site, along the proposed gen-tie line and/or within the 250-meter survey buffer (Table 4.4-3; Figure 4.4-5). Additional details are provided in Appendix E, *Biological Resources* (Tetra Tech 2024d).

Features 1 through 9, 12, and 13 are located completely or partially within the Project site; Features 10 and 11 are located within the 250-meter buffer; and Features 14 and 15 are located along the gen-tie line. Although a small portion of Feature 8 occurs within the Project site, the majority of this feature is located within the 250-meter buffer. All features within the Project site and vicinity are disturbed by active cattle grazing or agriculture.

Feature 1 is an ephemeral drainage that had a defined bed, banks, and channel throughout. Feature 1 had standing water and riparian vegetation within the channel in some areas, which

consisted of low cover of red willow, Fremont cottonwood, cattail, and rush (*Juncus* sp.). Feature 3 is also an ephemeral drainage that had a defined bed, banks, and channel in portions of the feature. Feature 3 did not have standing water but had a small area within the channel with low cover of Fremont cottonwood and rush. Feature 1 and a portion of Feature 3 are shown in the NWI database as riverine (USFWS 2024). These two features converge in the central portion of the Project site and lead to Spring Creek, which is located to the southeast of the Project site.

Feature 2 is an ephemeral drainage feature that connects to Feature 1, but no standing water or riparian vegetation was found. Feature 2 did not have a defined bed, banks, and channel, but an ordinary high-water mark (OHWM) was evident. Feature 2 is not mapped in the NWI database (USFWS 2024).

Features 4 and 8 are disturbed riparian areas that did not have a defined bed, banks, and channel, although Feature 8 had an OHWM. Feature 4 had riparian vegetation consisting of sparse Fremont cottonwood, red willow, Goodding's black willow, and dock (*Rumex* sp.). Feature 8 consisted of sparse red willow and facultative (FAC) and facultative wetland (FACW) grasses including rye grass (*Festuca perennis*) and canary grass. Feature 4 is not shown in the NWI database, but Feature 8 is shown as riverine and a freshwater pond (USFWS 2024). Feature 4 may have historically connected to Spring Creek offsite to the southeast, but soil berms adjacent to Feature 14 have blocked the flow out of this area. Feature 8 leads off-site to the north and occurs predominantly outside the Project site within the 250-meter buffer.

Features 5 and 7 are ponds, where standing water was observed in 2019 and 2024 and can be observed in aerial imagery. Feature 6 is a depressional feature based on topography, but water has not been observed in this area during surveys and it is not visible in aerial imagery. These features ranged from low to moderate cover of FAC/FACW grasses, including rye grass and canary grass. Feature 7 is shown in the NWI database as riverine, but Features 5 and 6 do not have NWI data (USFWS 2024). Feature 7 may have historically connected to Feature 8, and Feature 5 may have historically connected to Feature 6 and Spring Creek, off site to the southeast, but soil berms adjacent to Features 5 and 7 have blocked the flow out of these areas.

Feature 9 is an erosional feature that did not have a defined bed, banks, and channel, or an OHWM. Feature 9 does not have NWI data (USFWS 2024).

Features 10 and 11 are within the 250-meter buffer on private property and could not be accessed during the survey. Observations were made using binoculars where feasible. Feature 10 is a pond with standing water that supported rush plants. Feature 11 is Spring Creek, which had standing water and a defined bed, banks and channel throughout. Vegetation within Feature 11 consisted of predominantly non-native grasses with sparse rush, willows, and Fremont cottonwood. Although a small portion of Feature 11 is within the Project site, it occurs entirely outside the fenceline and on adjacent private property. Feature 10 does not have NWI data, and Feature 11 is mapped in the NWI database as a freshwater pond (USFWS 2024).

Feature 12 is a pond, where standing water was observed in 2024, and it can also be observed in aerial imagery. Feature 13 is a depressional feature, based on topography, but only 1 inch of standing water was observed in 2024, and standing water is not visible in aerial imagery. Features 12 and 13 were predominantly unvegetated, with very low cover of herbs and non-native grasses. Features 12 and 13 are not mapped in the NWI database (USFWS 2024).

Features 14 and 15 are along the gen-tie line within the 250-meter buffer. Both features are located on private property and could not be accessed during the survey, but binoculars were used to make observations. These two features are drainages that had a defined bed, banks, and channel and are mapped as riverine in the NWI database (USFWS 2024). Standing water was not observed within Feature 14. Feature 15 is Salt Creek and had standing water throughout. Vegetation within Feature 14 consisted of non-native grasses, with sparse and patchy willows, dock, and rush. Feature 15 consisted of riparian woodland vegetation with willows, Fremont cottonwood, and dense patches of cattail, rush, dock, and wetland grasses.

Jurisdictional Acreage

Table 4.4-3 summarizes the extent of jurisdictional areas mapped within the Project site (Tetra Tech 2024d). While aquatic features were mapped within a 250-meter buffer surrounding the Project site, only values displayed on Table 4.4-3 account for acreages within the Project site. No jurisdictional aquatic features will be impacted during Project construction or operations.

The Project site does not contain jurisdictional wetlands regulated by the United States Army Corps of Engineers (USACE). Portions of Feature 1 and the entirety of Features 5 and 7 met all three parameters (vegetation, hydric soils, and hydrology) required for USACE wetlands. However, since these features were either not relatively permanent or were isolated, they do not constitute USACE wetlands and would only be regulated by the Regional Water Quality Control Board (RWQCB).

Features 11 (Spring Creek) and 15 (Salt Creek) are intermittent tributaries that are likely relatively permanent. As such, these features were determined to be WOTUS and would be regulated by the USACE.

Portions of Feature 1, and the entirety of Features 2, 3, 6, 8, and 10 through 15, are surface water features and would be considered Waters of the State. As such these features would be regulated by the RWQCB.

Portions of Feature 3, and the entirety of Features 1, 5, 7, 10, 12, 14, and 15, have a defined bed, bank, and channel, or are a ponded feature, which meet the criteria for CDFW jurisdiction.

Feature 4, a disturbed riparian area, and Feature 9, an erosional feature, neither have a defined bed, bank, channel, or OHWM, and did not meet the criteria for jurisdiction under the USACE, RWQCB, or CDFW.

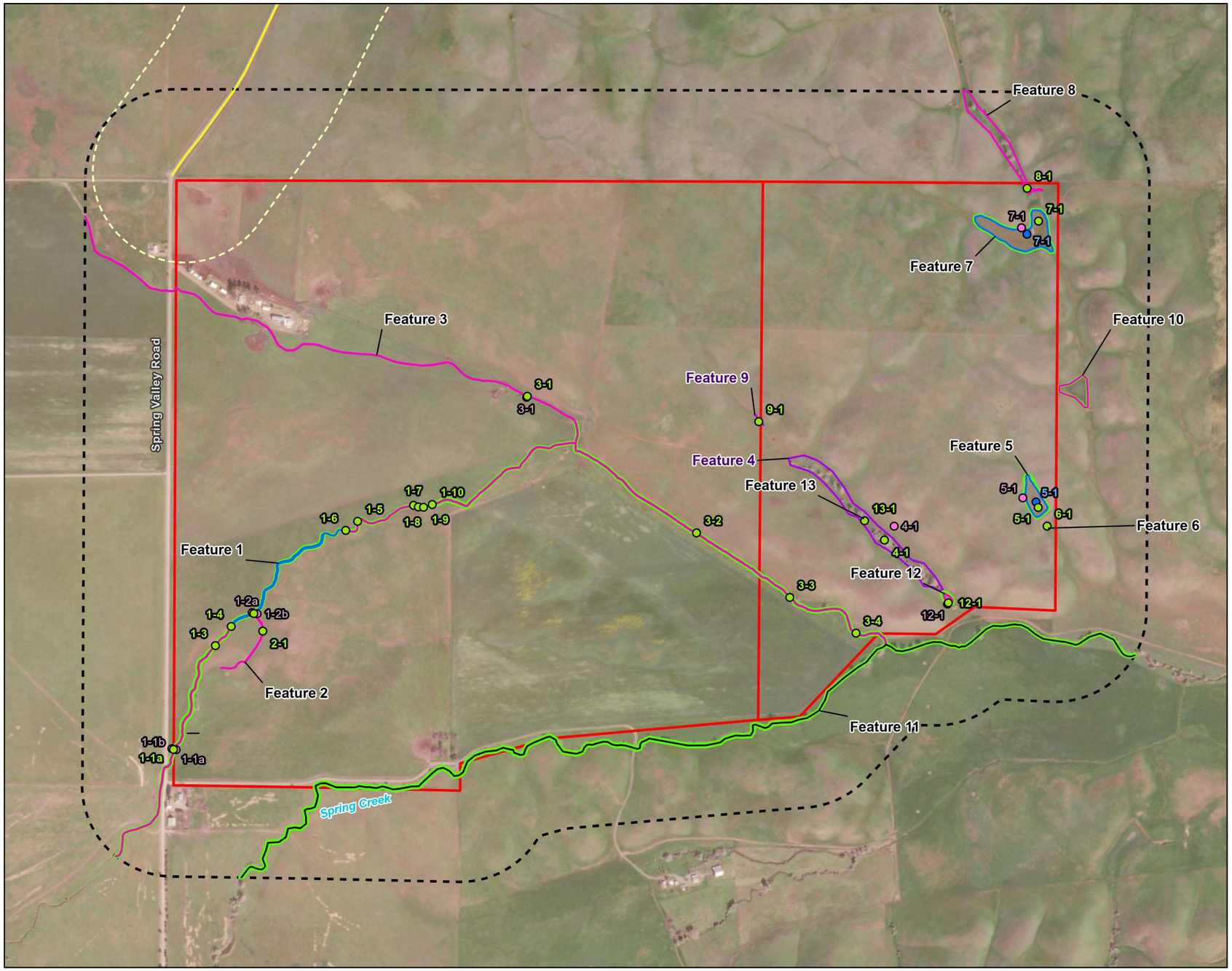
Table 4.4-3. Acreage of Mapped Jurisdictional Areas within the Project Site

Sample Area	USACE Jurisdiction (acres)	RWQCB Wetland Waters of the State (acres)	RWQCB Non-Wetland Waters of the State (acres)	CDFW Jurisdiction (acres)	Impact Area (acres)
Feature 1	-	0.38	0.29	2.30	0
Feature 2	-	-	0.05	-	0
Feature 3	-	-	0.47	1.62	0
Feature 4	-	-	-	-	0
Feature 5	-	0.88	-	1.10	0
Feature 6	-	-	0.04	-	0
Feature 7	-	2.78	-	3.09	0
Feature 8	-	-	0.13	-	0

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

Sample Area	USACE Jurisdiction (acres)	RWQCB Wetland Waters of the State (acres)	RWQCB Non-Wetland Waters of the State (acres)	CDFW Jurisdiction (acres)	Impact Area (acres)
Feature 9	-	-	-	-	0
Feature 10	-	-	+	+	0
Feature 11**	0.21	+	0.21	1.11	0
Feature 12	-	-	0.10	0.17	0
Feature 13	-	-	0.01	-	0
Feature 14	-	-	+	+	0
Feature 15	+	+	+	+	0
Total	**0.21**	**4.04**	**1.30**	**9.39**	**0**

Note:
*Only acres within the Project site are provided; acres within the 250-meter buffer are not provided. Some mapped jurisdictions in Figure 4.4-5 may appear the same despite small differences in acres due to the scale of figures.
**A small portion of Feature 11 is within the Project site, but it occurs entirely outside the Project fenceline. Although portions of Feature 11 are likely wetlands, sampling could not be conducted because this feature is on private property; therefore, acres have been included under non-wetland Waters of the State in this table.
+Jurisdictional area occurs outside the Project site within the 250-meter buffer.



Janus Solar Project

Colusa County, CA

4.4-5 Jurisdictional Delineation Results

- Project Site
- Project Site 250-meter Buffer
- Gen-tie Line
- Gen-tie Line 250-meter Buffer

Jurisdictional Delineation

- Transition Sample Point
- Upland Sample Point
- Potential Wetland Sample Point
- CDFW Jurisdiction
- RWQCB Non-Wetland Waters of the State
- RWQCB Wetland Waters of the State
- USACE Waters of the U.S./ RWQCB Waters of the State
- Feature Boundary (Non-Jurisdictional)

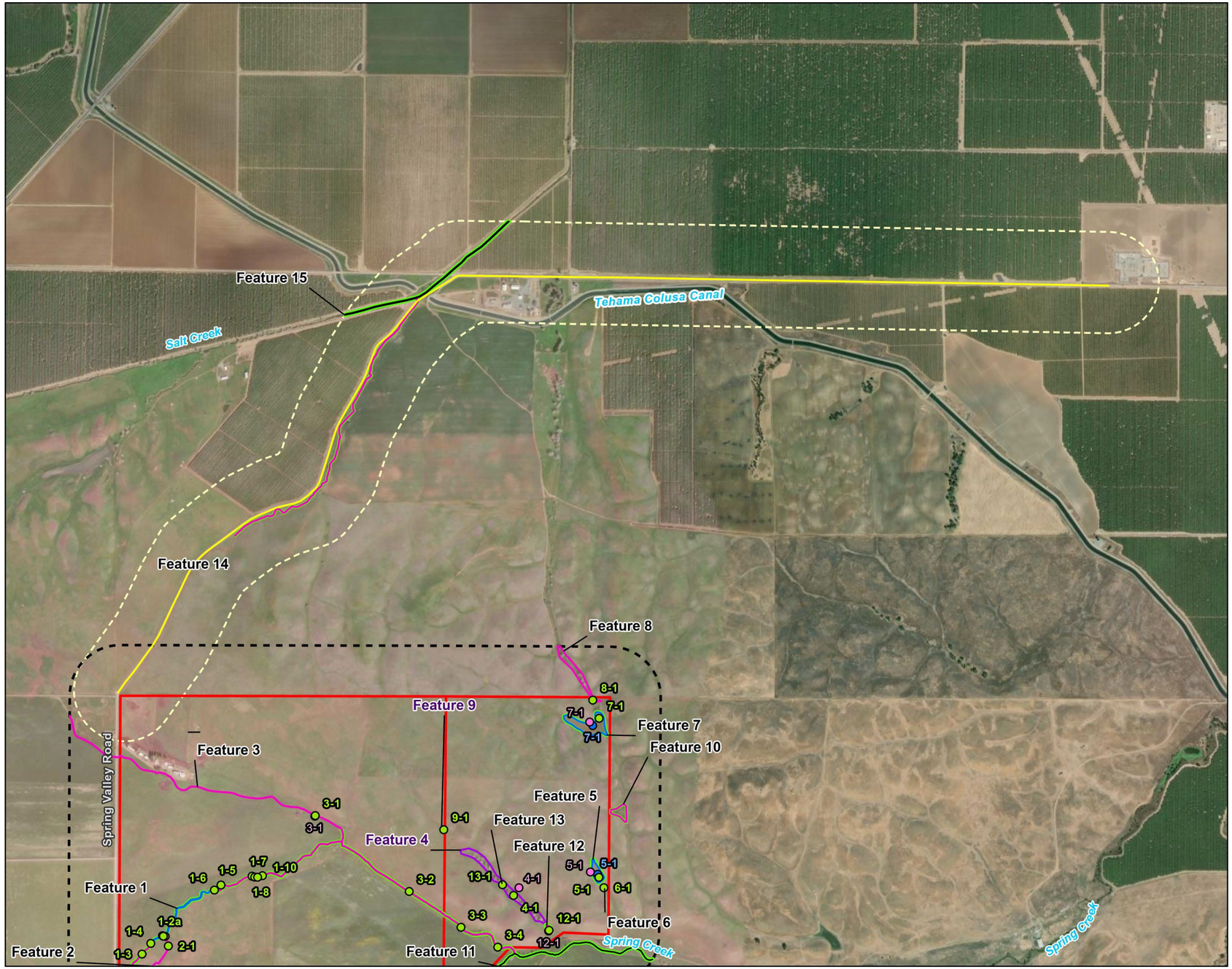
Note: Delineated features enlarged for visibility on this figure.

0 500 1,000 US Feet

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

NOT FOR CONSTRUCTION

Figure 4.4-5. Jurisdictional Delineation Results



Janus Solar Project

Colusa County, CA

4.4-5 Jurisdictional Delineation Results

- Project Site
- Project Site 250-meter Buffer
- Gen-tie Line
- Gen-tie Line 250-meter Buffer

Jurisdictional Delineation

- Transition Sample Point
- Upland Sample Point
- Potential Wetland Sample Point
- CDFW Jurisdiction
- RWQCB Non-Wetland Waters of the State
- RWQCB Wetland Waters of the State
- USACE Waters of the U.S./ RWQCB Waters of the State
- Feature Boundary (Non-Jurisdictional)

Note: Delineated features enlarged for visibility on this figure.

0 500 1,000 US Feet

Scale is 1:18,000 when printed at 11"x17"

NOT FOR CONSTRUCTION

Figure 4.4-5. Jurisdictional Delineation Results

4.4.2 Regulatory Setting

4.4.2.1 Federal

Federal Endangered Species Act

The federal Endangered Species Act (ESA) 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 ESA. 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 ESA is divided into 18 sections that are intended to work together to prevent species from going extinct by helping to stabilize populations, reduce the threats to their survival, and by helping species recover to the point that they no longer require federal protection. Once a species is listed, Section 9 of the ESA 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 with the exception of plants on non-federal lands. 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. The 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.

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 WOTUS and for regulating water quality and establishing water quality standards for surface waters. Under Section 404 of the CWA, the USACE, under the authority of the U.S. Environmental Protection Agency (USEPA), regulates the discharge of dredged and fill material into "Waters of the U.S., including wetlands." USACE

implementation regulations are found at CFR Title 33, Sections 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the USEPA in conjunction with the USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into WOTUS only if there is no practicable alternative that would have less adverse impacts. Section 401 requires a project proponent for a federal license or permit that allows activities resulting in a discharge to WOTUS to obtain State certification, thereby ensuring that the discharge will comply with provisions of the CWA. In California, the State Water Resources Control Board and each of its nine RWQCBs administer the Section 401 water quality certification program. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into WOTUS. The CWA and its applicability to the Project is discussed in further detail in Section 4.10, Hydrology.

4.4.2.2 State

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." 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.

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. Conditions for the issuance of permits allowing incidental take include that the adverse effects of the take must be minimized and fully mitigated, adequate funding must be ensured for implementation of identified mitigation, and 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 species 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.

Senate Bill 147, discussed further below allows for the issuance of Incidental Take Permits for fully protected species for certain renewable energy and infrastructure projects.

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.

CDFW generally regards as rare many plant species included on California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B of the CNPS Inventory of Rare and Endangered Vascular Plants of California. In addition, sometimes CRPR 3 and 4 plants are considered if the population has local significance in the area and is impacted by the project based on CNPS guidance (CNPS 2020).

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, 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.

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 WOTUS, 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). The USACE retains and has not delegated jurisdiction to issue Section 404 permits for discharges of fill to WOTUS.

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

WOTUS 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 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 WOTUS, 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 Senate Bill 147

Senate Bill 147 allows for CDFW to issue Incidental Take Permits for fully protected species for certain renewable energy and infrastructure projects through 2033. These include solar photovoltaic projects and any appurtenant infrastructure improvement. An Incidental Take Permit for a fully protected species must be processed pursuant to provisions in CESA including requiring permittees to minimize and fully mitigate impacts to the species. The permit must also satisfy conservation standards that require the applicant to take all measures necessary to ensure that take is voided to the maximum extent possible.

4.4.2.3 Local

Colusa County General Plan

The Colusa County General Plan ("General Plan") 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). General Plan policies to address biological resource impacts due to development that are relevant to the proposed Project include:

Goal CON-1: *Conserve and protect Colusa County's ecosystem.*

Objective CON-1A: *Protect, enhance, and manage the County's ecosystem and habitats*

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.

Objective CON-1B: *Protect endangered, threatened and special status plant and animal species, their habitats, and other sensitive habitats.*

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.

Objective CON-1D: *Protect surface water quality in the County's lakes, streams, creeks and rivers.*

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.

4.4.3 Methodology

The following summarizes the literature and field survey methods used for evaluating the biological resources for the proposed Project. Biological resources evaluated include sensitive habitats, special status plant and animal species, potential for wildlife movement corridors, and jurisdictional features. The potential for special status species to occur on the Project site is based on the results of database research, surveys conducted on the Project site and vicinity, the presence of suitable habitat, and the proximity of the Project site to previously recorded occurrence data. See Appendix E, *Biological Resources*, for additional details on the methodology.

4.4.3.1 Literature Review

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

- CDFW California Natural Diversity Database (CNDDB) Salt Canyon (3912213) USGS 7.5-minute quadrangle, and the eight surrounding quadrangles, including Manor Slough (3912223), Williams (3912222), Cortina Creek (3912212), Glascock Mtn. (3812283), Leesville (3912224), Wilbur Springs (3912214), Rumsey (3812282), and Wilson Valley (3812284) (CDFW 2024a);
- CNPS Inventory of Rare and Endangered Vascular Plants of California for the aforementioned USGS 7.5-minute quadrangles (CNPS 2024);
- USGS topographic maps
- Satellite and aerial imagery from Google Earth (Google Earth 2024)
- USFWS NWI data (USFWS 2024); and
- United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey (NRCS 2024).

4.4.3.2 Field Surveys

A multi-year effort to document existing biological resources within the Project site and vicinity was conducted by Tetra Tech and subconsultant biologists in 2020, 2021, and 2024. The biologists visited the Project site numerous times to conduct the field surveys listed in Table 4.4-4. Protocol-level winter season BUOW surveys are scheduled for the winter of 2024–2025.

Table 4.4-4. Field Surveys Conducted

Field Surveys Conducted	Dates	Notes
Spring rare plant survey, updated vegetation community mapping	April 6-9, 2020; and May 20-24, 2024	Surveys were performed in all areas with potential rare plant habitat
Summer rare plant surveys, updated vegetation community mapping	June 9-10, 2020; July 8-9, 2020; and July 9-10, 2024	Surveys were performed all areas with potential habitat for summer blooming rare plants.
Raptor nest survey	April 10-11, 2020; April 17-19, 2024; and May 22-23, 2024	All raptor nests, including Swainson's hawk nests identified in 2021 were visited during the April 2024 survey. Inactive nests identified in April 2024 were revisited in May 2024.
Swainson's hawk additional nest checks	June 10, 2020; July 9, 2020; and	Additional checks of active Swainson's hawk nests were conducted. Previously identified

Field Surveys Conducted	Dates	Notes
	May 22-23, 2024	Swainson's hawk nests that were inactive in April 2024 were rechecked in May 2024.
Protocol BUOW burrow survey	June 24-27, 2024	Burrow survey was conducted sitewide.
Protocol breeding season BUOW surveys	June 27-28, 2024; July 2-3, 2024; and July 9-10, 2024	Surveys on July 9 and 10, 2024 were conducted concurrently with the summer rare plant survey.
Jurisdictional delineation	January 18-21, 2021; and May 20-24, 2024	Jurisdictional delineation was conducted sitewide.
CBB habitat assessment and survey	July 15-18, 2024	Habitat assessment was conducted sitewide and survey was conducted in focus survey areas.

4.4.3.3 Impact Analysis

Biological resources 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 effects 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 to the extent feasible, approximately 666 acres of the 886-acre site would be used for the Project (Figure 2-2). Permanent impacts would include construction of the Solar Facility, BESS, access roads, and perimeter fences. The gen-tie line would not impact areas of natural habitat, as it would occur within an existing road easement. The majority of the permanently impacted acres would be converted to solar panel arrays and supporting 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 site would be impacted; remaining areas would retain their current habitat types, and no disturbance would occur (Figure 2-2). Impacts to specific biological resources and mitigation measures are discussed in the sections below.

4.4.5.1 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. No special status plants were observed during protocol-level rare plant surveys conducted for the Project. Therefore, the Project would have no substantial adverse effects on special status plants, and the impact would be less than significant.

4.4.5.2 Crotch's Bumble Bee

Due to the commonality of habitat types (grasslands and shrublands) and features (i.e., small mammal burrows, logs) that this species can utilize for nesting, and their diversity of foraging and nectaring plants, CBB habitat is considered widespread and abundant in the Project region. Five individual CBB observed foraging in the Project site in July 2024, and the site could potentially support CBB nesting; therefore, vegetation or ground disturbing activities during Project construction have the potential to result in significant impacts on this species should they occur. With implementation of mitigation measures **BIO-1** and **BIO-2**, construction impacts would be reduced to a less than significant level, by incorporating specific avoidance measures in coordination with CDFW and implementing a worker environmental awareness training program. This would include the development of a CBB avoidance plan that is submitted to CDFW for review. If it is ultimately determined that avoidance of CBB is not feasible then additional consultation with CDFW will occur to ensure that significant adverse effects to CBB will not occur. Thus, the Project would have no substantial adverse effects on CBB during construction.

Project operations and maintenance are unlikely to impact CBB, as vehicle traffic and on-site personnel would be minimal and heavy equipment would be infrequently used. 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 to CBB.

The Vegetation Management and Wildfire Prevention Plan (mitigation measure **FIRE-1**) would implement measures to control and maintain the vegetation throughout the Project site during operations and maintenance. The approved vegetation management activities may significantly impact CBB. However, as discussed previously, mitigation measures **BIO-1** and **BIO-2** would be implemented to avoid impacts to CBB through implementation of CDFW-approved avoidance measures, including coordination of applicable requirements included in mitigation measure **FIRE-1**, and the implementation of a worker environmental awareness training program. 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.

4.4.5.3 Burrowing Owl

A total of 48 suitable burrows and 26 suitable surrogate burrows for BUOW were observed within the BSA during the 2024 protocol burrow survey (Figure 4.4-3). However, no BUOW were observed during the 2024 breeding season protocol surveys. Winter season protocol-level surveys will occur in winter of 2024–2025 to determine if BUOW overwinter within the BSA. Project construction, including ground disturbance, noise, vehicle traffic, and on-site personnel, could 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, and therefore are considered potentially significant. All construction lighting would be shielded, directed downward, and temporary to minimize potential impacts. With implementation of mitigation measures **BIO-1** and **BIO-2** Project impacts would be reduced to a less than significant level, and there would be no substantial adverse effects on BUOW. These measures include development of an avoidance plan in coordination with CDFW if BUOW are detected during the winter season protocol surveys or pre-construction surveys, and implementation of a worker environmental awareness training program.

Project operations and maintenance would be 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.

Vegetation removal activities as described in mitigation measure **FIRE-1** may be required during operations and there is potential for behavior disturbances or nest failure if BUOW are present. As such, a BUOW pre-construction survey will be conducted in accordance with mitigation measure **BIO-1** prior to vegetation removal activities. If a BUOW is observed, an appropriately sized buffer would be implemented depending on the time of year, and an avoidance plan would be developed and implemented in coordination with CDFW. 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.

4.4.5.4 Swainson's Hawk and Other Raptors

During the 2024 Swainson's hawk nest surveys, six Swainson's hawk nests were identified within 10 miles of the Project site. Each of these nests was located more than 5 miles from the Project site (Tetra Tech 2024b; Figure 4.4-4). The area within the Project site and up to 0.5 miles

surrounding the Project site boundary is considered the area of direct or indirect impact that may be subject to construction-related disturbances for Swainson's hawk nesting territories. No nests were identified within this area. Therefore, the Project would not remove Swainson's hawk nests or affect the reproductive outcome of the active Swainson's hawk nests, and no direct impacts are anticipated to occur as a result of the Project. Similarly, because the nearest nest is over 5 miles from the Project site, indirect construction-related impacts such as noise or visual disturbances are not anticipated to affect the reproductive outcome of the active Swainson's hawk nests identified during the 2024 survey.

While no Swainson's hawk nests were observed at the Project site, the Project site could still be utilized as foraging habitat. Swainson's hawks were observed foraging at the Project site in 2024. Project construction on the *Aegilops triuncialis* Provisional Herbaceous Semi-Natural Alliance, *Amsinckia menziesii* – *Achyrachaena mollis* Herbaceous Alliance, and planted common wheat field habitats would reduce the foraging habitat for raptors, including Swainson's hawk. The Project is anticipated to develop 666 acres of the Project site, which is considered suitable foraging habitat for Swainson's hawk (Tetra Tech 2024b). It should be noted that following construction, the solar panels would be aboveground, and their presence along with vegetation management activities as part of mitigation measure **FIRE-**1 would not result in the permanent removal of all habitats, allowing for ongoing floral and fauna uses. As such, the Project site could still allow for continued use by prey species and foraging lands for raptor species.

Overall, the Project would impact approximately 2 percent of the total suitable Swainson's hawk foraging habitat in a 10-mile radius around the Project site (Tetra Tech 2024b). Although the Project site and surrounding grasslands are considered suitable foraging habitat, the development of the Project site is not anticipated to affect Swainson's hawk nesting territories and would only result in minimal loss of regional foraging habitat. Therefore, the construction impact to foraging habitat would not result in substantial adverse effects on the species.

Other raptors such as red-tailed hawks, prairie falcon, and northern harrier, could also use the site for foraging and/or nesting. These species would have a similar loss of foraging ground as Swainson's hawks.

Ground disturbance, construction-related noise, increased vehicle traffic, and on-site personnel may disturb these species if they are nesting within or near the Project site during construction, which could result in potentially significant impacts on breeding raptors, their nests, young, or eggs. However, implementation of mitigation measures **BIO-1**, **BIO-2**, and **BIO-3**, which require nesting bird surveys and implementation of no work buffers if active nests are located within or near the Project site and implementation of a worker environmental awareness training program, would reduce construction-related impacts to Swainson's hawk and other raptors to a less than significant level. With implementation of these avoidance measures, 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 as 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 (APLIC 2006, APLIC 2012) to reduce the potential for bird injury and mortality from collisions and electrocution. If vegetation removal is required during the nesting bird season (February 1 to August 31) there may be potentially significant impacts to nesting birds, such as egg or young abandonment. With implementation of mitigation measures **BIO-1** and **BIO-3** surveys for nesting birds and protection of active nests would reduce these impacts to less than significant. 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.

4.4.5.5 Special Status Migratory Birds including Tricolored Blackbird and White Faced Ibis

A number of avian species may use the Project site to forage, nest, or as a migratory stopover. During construction, ground disturbance, construction-related noise, increased vehicle traffic, and on-site personnel may disturb avian species if foraging or nesting on or near the Project site. Construction of the proposed Project would develop potential foraging habitat that could have been 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 to the species. During construction, the grasslands and trees within and adjacent to the Project site may be used as nest sites by a number of avian species. Construction-related disturbances may result in loss of individuals, eggs, or nests; However, with implementation of mitigation measure **BIO-2** and **BIO-3**, which include conducting nesting bird surveys prior to disturbances and implementing a worker environmental awareness training program, construction-related impacts to nesting migratory birds would be less than significant with mitigation incorporated.

Direct and indirect impacts to avian species may occur during Project operations and maintenance through collision with Project facilities, including transmission wires, fencing, and solar array structures. 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. Potential direct impacts to migratory bird species may also occur through attraction to solar panels or “lake effect” from utility-scale solar panel arrays. The “lake effect” refers to the perception of solar panels as water by birds (Kosciuch et al. 2021). Solar panels are both reflective and polarize light, which are elements thought to mimic water or related suitable habitat. As a result, some have hypothesized that solar panels can attract bird species that mistake the panels for bodies of water, and that some birds in some landscapes could be attracted to them resulting in possible injury or death (Diehl et al. 2024). To reduce potential significant impacts to migratory birds, the solar panels for the Project would be designed to be anti-reflective to minimize glare and will be on a tracking system.

Limited monitoring data is available to assess avian collisions with solar panels and no data exists for Colusa County. In an assessment of avian mortality at utility scale solar energy facilities, Waltson et al. (2016) examined the California Valley Solar Ranch, a 250 MW PV solar project located in San Luis Obispo. Findings indicated that the average mortality associated with the PV solar facility was approximately 0.5 birds per MW per year. Kosciuch et al. 2020 conducted a comprehensive review of bird mortality patterns from studies completed January 2013 to September 2018 at 11 PV solar facilities in southern California in Imperial, Riverside, San

Bernardino, and San Luis Obispo Counties, and Nevada in Clark and Mineral counties to estimate PV-related bird mortality. Kosciuch et al. (2020) found four patterns consistent among the facilities: 1) most fatalities were of unknown cause and only reported as feather spots, 2) most carcasses were from abundant ground-dwelling birds, 3) no relatively large fatality events were detected, 4) most carcasses were found in fall. Findings indicate that the average rate of mortality across the 11 PV facilities was 2.49 bird fatalities per MW per year. Based on this rate, the average bird fatality of the proposed Project (80 MW) would be approximately 200 birds per year. However, it should be noted that the Project would occur in Colusa County which may have a different fatality rate than projects located in southern California or Nevada regions. 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.

Project operations and maintenance are unlikely to impact special status migratory birds, as vehicle traffic and on-site personnel would be minimal and heavy equipment would be infrequently used. The minor increase in vehicle traffic and on-site personnel would be temporary, and normal wildlife behavior is expected to resume after the disturbance. If vegetation removal is required during the nesting bird season (February 1 to August 31) there may be potentially significant impacts to nesting birds, such as egg or young abandonment. With implementation of mitigation measures **BIO-1** and **BIO-3** surveys for nesting birds and protection of active nests would reduce these impacts to less than significant.

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.

4.4.5.6 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 and are therefore considered potentially significant. With implementation of mitigation measures **BIO-1** and **BIO-2**, which include preconstruction surveys and implementation of construction site best management practices such as preventing inadvertent entrapment, and implementation of a worker environmental awareness training program, construction-related impacts would be reduced to a less than significant level and the Project would have no substantial adverse effects on American badger. Therefore, impacts related to Project construction would be less than significant with mitigation incorporated.

Project operations and maintenance are unlikely to impact American badger as 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 during operations, there is potential for behavioral disturbances, if badgers are found on the Project site. However, these disturbances are expected to be short-term, similar to existing disturbance patterns in the vicinity of the Project and are not expected to result in direct mortality or injury to individual badgers. As such, Project operations and maintenance would have no substantial adverse effect on this species.

4.4.5.7 Western Spadefoot, Foothill Yellow-legged Frog, and Giant Garter Snake

While western spadefoot, Foothill yellow-legged frog, and giant garter snake were not observed during the field surveys, potentially suitable aquatic features and upland habitat were found in the Project site, which may be used by these species. Construction of the proposed Project, including clearing and grubbing vegetation, ground disturbance, noise, vehicle traffic, and on-site personnel has the potential to affect these species if present in or near the construction area. These impacts may result in direct mortality or behavioral disturbance; therefore, the impact is potentially significant. There would be no impact to aquatic habitats because the Project is designed to avoid any jurisdictional waters. With the implementation of mitigation measure **BIO-2**, including worker environmental training, limiting areas of disturbance, and avoiding sensitive habitats, construction impacts would be reduced to a less than significant level and the Project would have no substantial adverse effects on western spadefoot, foothill yellow-legged frog, or giant garter snake.

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 at 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 contains sparse native and non-native trees (Figure 4.4-1). All of these areas would be avoided during Project construction, operations, and maintenance activities. 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 protected wetlands occur on the Project site (Table 4.4-3; Figure 4.4-5). No federally protected wetlands occur on the Project site. The wetlands consist of distinct portions of a drainage and two depressional ponds. Development would occur over 100 feet from the state protected wetlands and a setback distance of at least 50 feet or more would be implemented to protect state wetlands per Colusa County zoning code 44-5.20 (Colusa County 2024). Thus, all wetlands would be avoided during Project construction, operations, and maintenance activities. The Project has also been designed to follow natural drainage patterns and would avoid hydrological interruption of wetlands. 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 Project 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. 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 which surrounds the entirety of the Project site. Wildlife that 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 1-7, 1-8, 1-11 through 1-18, 1-23, 1-24, 1-27, and 1-33. 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

Crotch's Bumble Bee

Prior to ground disturbing or vegetation removal and management activities within the Project site, a CBB avoidance plan will be prepared and submitted to CDFW for review. This plan will include specific avoidance measures that will be implemented to avoid take of the species. These measures are anticipated to include but not be limited to pre-construction surveys for CBB individuals and nests, avoidance of vegetation removal to the extent feasible during the CBB

colony active period, procedures for vegetation management in coordination with mitigation measure **FIRE-1**, and implementation of avoidance buffers around CBB individuals and nests if they are observed. If it is ultimately determined that avoidance of CBB is not feasible, then the Project will seek an Incidental Take Permit from CDFW.

Burrowing Owl

Pre-construction surveys shall be performed no less than 14 days prior to the initiation of ground-disturbing activities (e.g., vegetation clearing or grading). A qualified biologist shall conduct pre-construction surveys in all suitable habitat areas in the Project site and 150 meters around the Project site (access permitting). Areas that have been plowed within 12 months prior to the start of ground-disturbing activities are not considered suitable habitat. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise, or begin 2 hours before sunset and continue until 1 hour after sunset (3 hours total). A minimum of two surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted, and their locations will be mapped. If the work activity halts for a period of 14 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. As defined in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012), buffer size is dependent upon time of year and level of disturbance at the Project site. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW. The BUOW survey can be conducted in conjunction with a nesting bird survey (required under the Migratory Bird Treaty Act), if timing is appropriate.

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 and a 0.5-mile buffer. 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 14 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 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 CBB, burrowing owl, Swainson's hawk, American badger, western spadefoot, foothill yellow-legged frog, giant garter snake, 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**, 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 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 their vicinity.
- 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, 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 Project 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 14 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., 300 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 in consultation with CDFW.

4.4.7 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would

extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

The PG&E Cortina Substation is located on Walnut Drive and is surrounded by existing orchards. The substation vicinity provides no habitat to low-quality habitat for the special status species discussed in Table 4.4-2 due to lack of suitable habitat characteristics and the disturbances associated with the existing substation and orchards. However, implementation of mitigation measures **BIO-1**, **BIO-2**, and **BIO-3**, which require preconstruction surveys, implementation of no work buffers if active nests or species are located within or near the work area and implementation of a worker environmental awareness training program, would reduce construction-related impacts from the substation improvements to special status species or nesting birds to a less than significant level. With implementation of these avoidance measures, the Project would have no substantial adverse effects on these species.

There are no sensitive natural communities, including riparian areas, or federal or state jurisdictional wetlands. There are no known wildlife corridors or wildlife nursey sites in the vicinity of the substation and the substation improvements are not anticipated to impede the ability of wildlife to move through the area. Nor would these improvements conflict with any local policies or ordinances protection biological resources. Therefore, the PG&E substation improvements is not anticipated to cause or contribute to any significant effect to these resources.

Therefore, the PG&E Cortina Substation improvements would have no significant impact on criteria described for Impacts 4.4-1 through 4.4-5, with implementation of mitigation measures BIO-1, BIO-2, and BIO-3. 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 Table 2-1 in Chapter 2.

4.4.8.1 Special-Status Species

Several special status species have been observed to currently utilize the Project site and surrounding vicinity, and based on the literature review and database searches completed for the Project, the region is known to support a diversity of special status species, which may utilize the Project site. Implementation of the Project, in addition to the other projects underway or proposed within Colusa County, may impact special status species, including CBB, BUOW, Swainson's hawk, American badger, western spadefoot, and giant garter snake. The Project site contains habitat to support foraging, nesting, and/or cover that may be utilized by these species. In addition, the Project site contains floral resources, insects, rodents, and small birds that may provide a foraging base for wildlife. The cumulative projects may result in impacts to these species, primarily associated with the loss of potential foraging or nesting habitat. However, Colusa County offers substantial amounts of undeveloped suitable foraging and nesting habitat for these species, and the areas affected by the identified cumulative projects do not represent a significant portion of remaining suitable foraging or nesting habitat within Colusa County. Furthermore, with implementation of mitigation measures **BIO-1, BIO-2,** and **BIO-3** the Project would avoid or minimize impacts to these special-status species. 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 the special status species with the potential to occur in the Project site.

Project impacts to nesting migratory birds would be less than significant with implementation of the proposed mitigation measures (**BIO-3**) by protecting nesting birds from disturbances during construction or operation and maintenance activities. Secondly, the loss of foraging habitat would be less than significant as the Project will result in development of only a small portion of the total available habitat within the Central Valley. There are no other solar development projects included in the cumulative project lists, so impacts related to solar panel collisions are limited the proposed Project. Available data suggest that injury to and mortality of birds may occur from collision with PV panels at solar facilities. However, as previously discussed, the solar panels for the Project would be designed to be anti-reflective to minimize glare and reduce potential collision impacts to migratory birds. The Project would include construction of new power lines that have potential to cause injury or mortality from collisions or electrocution, and these effects are likely cumulative with other projects in the County that will be constructing power lines such as the AYMIUM or Saloon Energy Storage Project (Table 2-1). However, this proposed Project includes the commitment to adhere to current Avian Power Line Interaction Committee design standards (APLIC 2006, APLIC 2012), 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.

4.4.8.2 Sensitive Natural Communities and Federal and State Jurisdictional Wetlands

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.

4.4.8.3 Wildlife Corridors

The Project site is heavily influenced by grazing, surrounded by cattle fences, and lacks large areas of intact natural habitat that may function as a movement corridor. In addition, no native wildlife nursery sites are known to occur on the Project site. Construction and operations of the Project would not substantially affect the baseline connectivity level and Project impacts to movement of wildlife and established native wildlife corridors would be less than significant. 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 the undeveloped land in the Central Valley that could be used for wildlife movement. In addition, the proposed Project and the cumulative projects are geographically isolated by current development such as highways, residences, towns, and agricultural fields and are not expected to cause a significant cumulative effect to 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.

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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 comments regarding Cultural Resources during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA.

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 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 (2024) soils across the Project site include avar clay, corning clay loam, Clear Lake clay, capay clay loam, and corval loam.

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 adaptations 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 et al. 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)

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 west from the coast 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 the 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 2024a). 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 2024a). 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 2024a). 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 2024).

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, 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 2024b). 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 depending upon the season.

4.5.2 Regulatory Setting

4.5.2.1 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 possesses 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). The 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.”

4.5.2.2 State

California Environmental Quality Act

CEQA (Section 21084.1) requires that 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 CEQA (Section 15064.5 (a)), a historic resource (e.g., a 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 Section 5024.1, 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, Sections 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 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 the 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 efforts to contact the tribes that may have an interest in the Project in compliance with AB 52.

4.5.2.3 Local

Colusa County General Plan

The Colusa County General Plan ("General Plan") 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 General Plan includes policies related to impacts to Cultural Resources due to development, and the policies relevant to the proposed Project include:

Goal CON-3: *Conserve and protect cultural and historical resources.*

Objective CON-3A: *Conserve Important Cultural Resources and the County's Heritage*

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 3-4: 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.

Objective CON-3B: *Protect Important Historic Resources and Use these Resources to Promote a Sense of Place and History in Colusa County.*

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.

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 initial NWIC record search was conducted in August 2020 (NWIC File No.: 20-0128) and an updated record search was conducted on July 16, 2024. As part of these record searches, 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)
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)

Report No.	Year	Author(s)/ Affiliation	Title	Study Type	Within Project Area or 1-mile
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 prehistoric 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. One built environment (architectural) resource, P-06-00285 (Reister Ranch Complex) is within a half mile of the Project. This resource is not eligible to the NRHP and has not been evaluated for the CRHR. No previously recorded CRHR or NRHP eligible cultural resources 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-06-000285 (CA-COL-000146/H)	Historic/Built Environment	Buildings and Structures: Reister Ranch Complex	1998. Lex Palmer	Not Eligible for the NRHP, Not evaluated for CRHR
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. 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). A request for consultation was received from the Yocha Dehe Wintun Nation, dated August 30,

2024 outside the 30-day formal consultation period. However, discussions with the Yocha Dehe Wintun Nation is ongoing. Mitigation measures to include worker cultural sensitivity training and tribal monitors to be present during Project construction have been included in anticipation of the ongoing consultation with the Yocha Dehe Wintun Nation (see Section 4.18 Tribal Cultural Resources).

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 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 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 Project 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

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

a) *Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?*
b) *Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*
c) *Disturb any human remains, including those interred outside of formal cemeteries?*
d) *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 isolated 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 meet 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 potentially impact archaeological resources. 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**, **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 descendant 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 potential 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). The Applicant shall make reasonable efforts to notify and involve members from existing tribes in the area such as, but not limited to, the Yocha Dehe Wintun Nation, the Cortina Rancheria Kletsel Dehe Band of Wintun Indians, and the Cachil Dehe Band of Wintun Indians of the Colusa Indian Community, in the worker education awareness program to provide additional perspective on the tribal resources in the region. The training will follow protocols such as the Patwin Cultural Protection and Preservation Plan.**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 a 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 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 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 (mitigation measure **CUL-2**) that will include 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 the 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 and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

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.

Therefore, the PG&E Cortina Substation improvements would have no significant impact on criteria described for Impacts 4.5-1 through 4.5-3. No additional mitigation 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**, **CUL-2**, and **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

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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 7,359 trillion British Thermal Units (Btu) in 2021 (the most recent year for which specific data are available), which equates to an average of 189 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 2024).

4.6.1.1 Electricity

In 2022 (the last year for which updated information is available), total system electricity generation for California was 287,220 gigawatt-hours (GWh), up 3.4 percent from 2021's total generation of 277,764 GWh. Approximately 70.8 percent of the electrical power needed to meet California's demand is produced in the state; the balance, approximately 29.2 percent, is imported from the Pacific Northwest and the Southwest. In 2022, California's in-state electricity generation was derived from natural gas (47.5 percent); large hydroelectric resources (7.19 percent); nuclear sources (8.7 percent); oil and coal (less than 1 percent); and renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (36.4 percent). Of the approximately 106,147 GWh generated from renewable sources in the state, solar-generated electricity made up the highest proportion (19.9 percent), followed by wind (6.9 percent), geothermal (5.5 percent), biomass (2.6 percent), and small hydroelectric (1.5 percent) (CEC 2024a).

Pacific Gas and Electric

Pacific Gas and Electric (PG&E) is an investor-owned utility that provides electricity supplies and services throughout a 70,000 square-mile service area that includes Colusa County, extending 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 2024a).

Pacific Gas and Electric provides electricity to the six million customers in its service territory, including residential, commercial, industrial, and agricultural consumers. In 2023, PG&E generated and/or procured a total of 36,018 GWh of electricity.[1] Of this total, PG&E owns approximately 7,820 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.

Table 4.6-1. P G&E-Owned Electricity Generating Sources (2023)

Source	Generating Capacity (MW)
Nuclear (Diablo Canyon - 2 reactors)	2,240
Hydroelectric	3,845

[1] This amount excludes electricity provided to direct access customers and Community Choice Aggregation (CCA) entities who procure their own supplies of electricity.

Source	Generating Capacity (MW)
Fossil Fuel-Fired	1,400
Battery Energy Storage System (BESS)	183
Solar Photovoltaic (13 units;12 in Fresno County, 1 in Kings County)	152
Total	**7,662**

Source: PG&E 2024b

As shown in Table 4.6-2, during 2023 approximately 37 percent of PG&E's energy deliveries were from renewable energy sources (PG&E 2024b).

Table 4.6-2. PG&E 2023 Renewable Energy Sources

Source	Percent of Total Energy Portfolio
Bioenergy	4
Geothermal	-
Wind	6
Renewable Portfolio Standard-Eligible Hydroelectric	3
Solar	24
Total	**37**

Source: PG&E 2024b

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 77,887 million kilowatt-hours (kWh) in 2022, of which approximately 10,092 million kWh were consumed by the industrial sector.

Table 4.6-3. Electricity Consumption in PG&E Service Area (2022)

Agricultural and Water Pump	Commercial Building	Commercial Other	Industry	Mining and Construction	Residential	Streetlight	Total Usage
All Usage Expressed in Millions of kWh							
7,506	26,928	4,056	10,092	1,814	27,210	281	77,887

Source: CEC 2024e

In Colusa County, approximately 314.4 GWh of electricity was consumed in 2019, with approximately 241.4 GWh consumed by non-residential uses (CEC 2024b).

Local Electrical Infrastructure

There are currently no utility-scale solar facilities in Colusa County. Existing electrical infrastructure in the vicinity of the proposed Project includes transmission lines and the PG&E Cortina Substation, which is located on Walnut Drive approximately 3 miles northeast of the Project site (measured linearly). The existing Cortina-Mendocino 115 kV transmission line runs generally east-west from the PG&E Cortina Substation north of the Project site.

The proposed Project would involve construction and operation of an 80 MW Solar Facility and an up to 80 MW_{AC} BESS. The proposed Project would connect to the existing PG&E Cortina Substation via a new 60 kV 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 Solar Facility during daylight hours, and the BESS would be used to dispatch additional electricity during either daylight or non-daylight hours.

4.6.1.2 Transportation Fuels

According to the CEC, California relies on petroleum-based fuels for approximately 85 percent of its transportation needs, and it is the largest consumer of motor gasoline and jet fuel in the United States (EIA 2024). In 2023, 23.4 percent of California's crude oil was produced within the state, 15.9 percent was produced in Alaska, and the remaining 60.7 percent was produced in foreign lands (CEC 2024d).

In 2020, taxable gasoline sales (including aviation gasoline) in California accounted for approximately 13.6 billion gallons of gasoline (CDTFA 2024a), and taxable diesel fuel sales accounted for approximately 3 billion gallons of diesel fuel (CDTFA 2024b). The CEC estimates that 36.4 million gallons of gasoline was consumed in 2022 in Colusa County (CEC 2024c).

4.6.2 Regulatory Setting

4.6.2.1 Federal

Corporate Average Fuel Economy Standards

Established by Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by requiring increases in the fuel economy of new cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and the U.S. Environmental Protection Agency (USEPA) jointly administer the CAFE standards (NHTSA, 2024). Congress has specified that CAFE standards must be set at the "maximum feasible level" taking into consideration: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.

Fuel efficiency standards for medium- and heavy-duty trucks have been jointly developed by USEPA and NHTSA. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles, and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type. USEPA and NHTSA have 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 (USEPA and NHTSA 2016). In 2022, a final rule established standards for passenger cars and light trucks, requiring an industry wide fleet average of 49 miles per gallon in 2026 (NHTSA 2024).

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.

Energy Policy Act of 2005

The 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.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 was enacted to increase the production of clean renewable fuels; increase the efficiency of products, buildings, and vehicles; improve the energy performance of the federal government; increase domestic energy security; develop renewable fuel production; and improve vehicle fuel economy. The Act included the first increase in fuel economy standards for passenger cars since 1975 and a new energy grant program for use by local governments in implementing energy efficiency initiatives, as well as a variety of green building incentives and programs.

Inflation Reduction Act of 2022

The Inflation Reduction Act (IRA) is a federal law enacted in 2022 aimed at reducing GHG emissions, building a clean economy, reducing energy costs, and advancing environmental justice. With funding from the IRA, federal agencies have launched number of clean energy financing and funding programs. The IRA positions the United States to establish its position as a world leader in domestic clean energy manufacturing, and make progress towards achieving the Biden Administration's climate goals, including a net-zero economy by 2050.

4.6.2.2 State

Warren-Alquist Act

The Warren-Alquist Energy Resources Conservation and Development Act (Warren–Alquist Act of 1974; Pub. Res. Code §§ 25000 et seq.) established the California Energy Resources Conservation and Development Commission (CEC), the state's primary energy policy and planning agency. The Act established a state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures.

Integrated Energy Policy Report

Senate Bill (SB) 1389 (Pub. Res. Code §§ 25300–25323; SB 1389) requires the CEC to prepare a biennial Integrated Energy Policy Report (IEPR) that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety (Pub Res. Code § 25301[a]).

California Renewables Portfolio Standard

California's Renewables Portfolio Standard (RPS) Program was enacted in 2002 by Senate Bill (SB) 1078 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. In 2011, Governor Brown signed SB 2X, requiring California retail electric providers to procure 33 percent of their retail energy sales from eligible renewable sources by 2020. In 2015, Governor Brown signed 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 2024).

In September 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. Specifically, SB 100 increased

required energy from renewable sources for both investor-owned and publicly owned utilities from 50 percent to 60 percent by 2030. Incrementally, 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 also signed Executive Order B-55-18, with a new statewide goal to achieve carbon neutrality (zero-net GHG emissions) by 2045 and to maintain net negative emissions thereafter.

In September 2022, Governor Newsom signed SB 1020, the Clean Energy, Jobs, and Affordability Act, which adds interim targets to the policy framework originally established in SB 100. The interim targets require renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040. The bill also requires all state agencies to rely on 100 percent renewable energy and zero-carbon resources to power their own facilities by 2035 and encourages better information sharing and coordination between agencies for transmission planning.

Greenhouse Gas Vehicle Emission Standards (AB 1493, Pavley)

In response to the transportation sector accounting for more than half of California's carbon dioxide (CO_2) emissions, Assembly Bill (AB) 1493 (commonly referred to as the California Air Resources Board's [CARB] "Pavley regulations"), enacted in 2002, requires CARB to set GHG emission standards for new passenger vehicles, light-duty trucks, and other vehicles manufactured in and after 2009 whose primary use is non-commercial personal transportation. Phase I of the legislation established standards for model years 2009–2016, and Phase II established standards for model years 2017–2025 (CARB 2024).

California Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted AB 32 (California Global Warming Solutions Act of 2006; Health and Safety Code (HSC), Division 25.5), which focuses on reducing GHG emissions in California to 1990 levels by 2020. Under HSC Division 25.5, CARB has the primary responsibility for reducing the State's GHG emissions; however, AB 32 also tasked the CEC and the CPUC with providing information, analysis, and recommendations to CARB regarding strategies to reduce GHG emissions in the energy sector.

In 2016, SB 32 and its companion bill, AB 197, amended HSC Division 25.5, establishing a new climate pollution reduction target of 40 percent below 1990 levels by 2030, as well as provisions to ensure that the benefits of state climate policies reach disadvantaged communities.

Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS), established in 2007 through Executive Order S-1-07 and administered by CARB through regulation (Title 17, California Code of Regulations [CCR] §§ 95480–95503), requires producers of petroleum-based fuels to reduce the carbon intensity of their products. Under the regulation, petroleum importers, refiners, and wholesalers can either develop their own low-carbon fuel products or buy LCFS credits from other companies that develop and sell low-carbon alternative fuels, such as biofuels, electricity, natural gas, and hydrogen.

Advanced Clean Cars Program

The Advanced Clean Cars Program, originally approved by CARB in 2012, requires vehicle manufacturers to produce increased numbers of clean vehicles in California to control smog, soot, and GHG emissions. This program includes the Low-Emissions Vehicle (LEV) regulations to reduce criteria pollutants and GHG emissions from light- and medium-duty gasoline-powered vehicles, as well as a Zero-Emission Vehicle (ZEV) regulation to require manufactures to produce an increasing number of ZEVs (i.e., battery, fuel cell electric, and plug-in hybrid electric vehicles).

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

In 2004, CARB adopted an Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (13 CCR § 2485) to reduce public exposure to diesel particulate matter emissions. The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on California highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than five minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

Truck and Bus Regulation

In addition to limiting exhaust from idling vehicles, in 2008, CARB approved regulations to reduce emissions from certain in-use diesel-fueled vehicles. The Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants from In-Use Heavy-Duty Diesel-Fueled Vehicles (the “Truck and Bus” regulation; 13 CCR § 2025) is meant to reduce nitrogen oxide, particulate matter less than 10 microns in diameter, and particulate matter less than 2.5 microns in diameter emissions from existing diesel vehicles operating in California. The phased regulation aims to reduce emissions by requiring installation of diesel soot filters and encouraging the retirement, replacement, or retrofit of older engines with newer emission-controlled models.

In-Use Off-Road Diesel-Fueled Fleets Regulation

The California Air Resources Board also promulgated emission standards for off-road diesel construction equipment greater than 25 horsepower (hp), such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation, adopted by CARB in 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR §§ 2449 et seq.).

While the goals of the Truck and Bus Regulation and the In-Use Off-Road Diesel-Fueled Fleets Regulation are primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines.

4.6.2.3 Local

Colusa County General Plan

The Colusa County General Plan ("General Plan") 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). General Plan policies related to were included in the 2012 General Plan Update to address energy and conservation impacts due to development, and the following policies are relevant to the proposed Project:

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 2-2: 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.

Action CON 2-A: Amend the Zoning Ordinance to streamline permitting and provide clear development standards for the production of biofuels, biomass, solar, wind and other energy alternatives to reduce dependency on fossil fuels.

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.

Action AG 2-D: Revise the Zoning Ordinance to define alternative energy and to develop performance standards for energy-generating and resource extraction uses on agricultural lands. These performance standards shall address environmental impact mitigation and compatibility with surrounding land uses, including but not limited to [*list of standards*].

Colusa County Zoning Ordinance

The Project site is located within the F-A zone; the gen-tie intersects land zoned as zoned as F-A and E-A (Colusa County 2014). Energy generation for off-site use is permitted within the F-A and E-A zones with approval of a Use Permit (Colusa County Zoning Ordinance § 44-2.20.30).

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, USEPA and NHTSA 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. The USEPA and NHTSA 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 the reduction of 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 CARB 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 pollutant emissions; however, compliance with the anti-idling and emissions regulations would also result in the efficient use of energy during construction and decommissioning.

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 on the proposed 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 building plans are submitted for the Project. 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.

Based on compliance with the applicable laws and standards outlined above, the proposed Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation.

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 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.

4.6.5 PG&E Cortina Substation

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

The improvements made would be within the Cortina Substation 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 obstruction of 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. However, the Project would also 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 CPUC energy storage program. No significant adverse cumulative effect would result in relation 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

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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 comments regarding Geology, Soils, and Paleontological Resources during the scoping period.

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. At 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 in 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 several 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, indicating the Project site is 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 the uplift of the Coast Ranges to the west and subsequent erosion of the overlying, younger materials. West of the Project site are 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 site and are labeled as Mesozoic in age. The elevation across the Project ranges from 144 to 331 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 (USDA 2023) soils across the Project site include:

- Ayar clay (approximately 36 percent) and Capay clay (approximately 33 percent) are both comprised of clay loam and clay and range between 0–64 inches in depth.
- Corning clay loam (approximately 27 percent) comprised of clay loam, clay, gravelly clay loam, and cobbly sandy clay loam and ranging between 0–60 inches in depth.
- Corval loam (approximately 3 percent) primarily comprised of clay loam and silty clay loam and ranging between 0–70 inches in depth.
- Clear Lake clay (approximately 1 percent) comprised of clay and silty clay and ranging between 0–79 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 (2023) soils across the gen-tie corridor include (from southwest to northeast):

- Corning clay loam, which consists of clay loam, clay, gravelly clay loam, and cobbly sandy clay loam, terrace slope, and alluvium, ranging between 0–60 inches in depth. Located

along the southwestern-most end of the transmission line corridor, along Spring Valley Road.

- Ayar clay is comprised primarily of clay and lower levels of clay loam, formed from alluvium and ranging between 0–79 inches in depth. Located along the majority of Spring Valley Road.
- Copay, consisting of clay loam and clay that formed in fine-textured alluvium derived from mostly sandstone and shale, and ranging between 0–64 inches in depth. A small segment is at the intersection of Spring Valley Road and Walnut Drive near Salt Creek.
- Hillgate loam, consisting of clay loam and clay formed in alluvium from mixed sources, and ranging from 0–60 inches in depth. Found 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 are considered active the last 11,700 years) 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., evidence of surface rupture sometime in the last 11,700 years) is the Resort Fault Zone, approximately 11.3 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; it 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 can 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 downslope 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 2024). 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 is typically caused by compaction of subsurface 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 have been reported in the County, 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 2021 Technical Memorandum evaluating the potential for paleontological resources to occur at the Project site and along the gen-tie corridor, and providing recommendations for management options based on the sensitivity of such resources (Appendix F-1). A subsequent 2024 Addendum to the Paleontological Resources Technical Memorandum was prepared for the proposed Project (Appendix F-2). The 2021 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 2021 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. As described in Appendix F-2 Addendum to the Paleontological Resources Technical Memorandum, the invertebrate locality is about 3.4 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, it established the National Earthquake Hazards Reduction Program (NEHRP). 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. Significant changes were also introduced in the NEHRP Reauthorization Act of 2018, including changes to findings, purposes and definitions, program activities and agency responsibilities, review of NEHRP, seismic standards, management of advanced national seismic systems, and authorization of appropriations.

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 (entry and exit), 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.

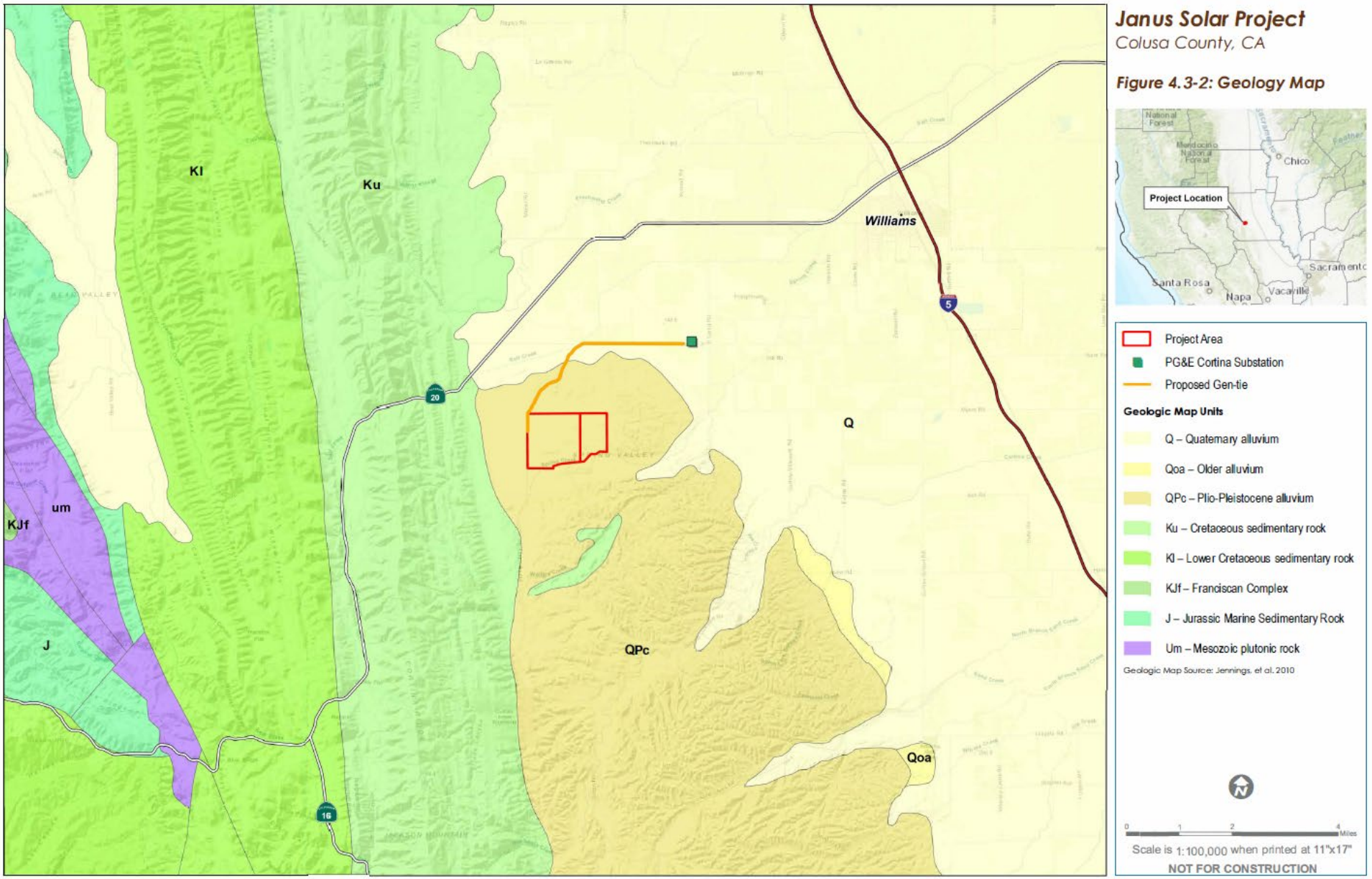

Figure 4.7-1. Geology Map

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 earthquake ground motions.

If a project is approved, 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 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 National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order 2022-0057-DWQ, NPDES No. CAS000002; which supersedes Order 2009-0009-DWQ 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.

4.7.2.3 Local

The Colusa County General Plan 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). General Plan objectives and policies regarding geology, soils, and paleontological resources from the Safety and Conservation Elements were included to address impacts of development and those that apply to the proposed Project include:

Goal SA-1: *Ensure the safety of County residents, businesses, and visitors from hazardous conditions, including natural catastrophes and human-caused emergencies.*

Objective SA 1-B: *Ensure that Planning and Development Procedures Identify and Mitigate Potential Hazards*

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.

Objective SA 1-C: *Reduce Risks to Human Life and Property from Seismic and Geological Hazards*

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.

Objective Con-3A: *Conserve Important Cultural Resources and the County's Heritage*

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, and the resources shall be examined by a qualified archaeologist, paleontologist, or historian for appropriate protection and preservation measures. 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 will be consulted, and work may only resume when appropriate measures have been taken and approved by the County Department of Planning and Building.

Colusa County Zoning Code

Section 44.2-20.20 of the Colusa County Zoning Code requires that uses in the agricultural zone comply with a performance standard that there is no net increase in offsite drainage flows, including peak flows during a storm event, and water quality measures shall be implemented to reduce stormwater pollutants.

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 4.7-1: *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 and gen-tie line do 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 is no current data available indicating the presence of Holocene-active faults within the Project site and gen-tie line. The nearest earthquake fault zones to the Project site and gen-tie line 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 and gen-tie line potentially are subject to moderate to severe seismic ground shaking due to proximity to the Resort and Willows fault zones. Should strong seismic ground shaking occur at the Project site or gen-tie line, 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 requires 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 and gen-tie line 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 and gen-tie line.

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 and gen-tie line are located on relatively flat topography with rolling hills. There are no mapped landslides on or around the Project (DOC 2024). 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 4.7-2: *Would the project result in substantial soil erosion or loss of topsoil?* **(Less than Significant Impact)**

The Project is not within a flood zone, and it would include minimal impervious surfaces for concrete pads for BESS and the substation. Solar panels would be mounted on steel posts that range between 6 to 13 feet above grade and would be separated by a sufficient distance pursuant to design parameters. The solar panels are not considered impervious surfaces because the solar panels tilt to track the sun, and therefore any rainwater falling on their surfaces would slide off and infiltrate the surrounding ground surface. 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 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, as well as with Section 44.2-20.20 of the Colusa County Zoning Code which requires there to be no net increase in offsite drainage flows, including peak flows during a storm event, and water quality measures to be implemented to reduce stormwater pollutants, 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, as well as compliance with Section 44.2-20.20 of the Colusa County Zoning Code, would reduce the impacts of soil erosion during decommissioning to less than significant.

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)**

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 and gen-tie line 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 4.7-4: *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)**

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 2023). 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 4.7-5: *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, 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. 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 4.7-6: *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?* **(Less than Significant Impact with Mitigation Incorporated)**

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 approximately 3.4 miles from the Project, as described in Appendix F, Addendum to the Paleontological Resources Technical Memorandum.

Much of the gen-tie line is mapped as Plio-Pleistocene alluvium (QPc) surface geologic unit, with a moderate probability of fossils occurring (PFYC-3a). Other portions of the gen-tie line occur on

Quaternary alluvium (Q) or Older alluvium (Qoa) units, which 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, thus have low paleontological sensitivity (PFYC-2). Older alluvium (Qoa) sediments can contain scattered paleontological resources but have a low probability of containing fossils and are considered to have a low to moderate paleontological sensitivity in this area (PFYC-2 to PFYC-3a).

Project-related excavation to install the steel supports for the solar panels may occur at depths of 6 to 13 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. To mitigate potential impacts, implementation of mitigation measures **GEO-1**, requiring worker training and implementation of a contingency protocol in the case of an inadvertent find, and **GEO-2**, requiring a qualified paleontological specialist to be brought on site if any unanticipated discoveries are found, would be implemented, such that the impact would be less than significant.

The gen-tie line is anticipated to be built overhead, which would result in minimal ground disturbance. The construction of the overhead gen-tie line could result in some ground disturbance to Plio-Pleistocene alluvium (QPc), Quaternary alluvium (Q), and Older alluvium (Qoa) geologic units, ranging from low to moderate paleontological sensitivity. The implementation of mitigation measures **GEO-1** and **GEO-2** would decrease the likelihood of directly or indirectly destroying a unique paleontological resource, site or geologic feature, therefore impacts 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.

4.7.5.1 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

The construction activities associated with the PG&E infrastructure would be required to comply with, and adhere to, the design criteria included in the CBC. 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 below ground surface, 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.

4.7.6 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 and the 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.

4.7.7 References

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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 received comments regarding Greenhouse Gas Emissions during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA. Information in this section is based on the Air Quality and Greenhouse Gas Technical Report located in Appendix D of this EIR.

4.8.1 Existing Conditions

4.8.1.1 The Greenhouse Effect

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 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; however, infrared radiation is selectively absorbed or "trapped" by GHGs in the atmosphere 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 decreased precipitation as snow, rising 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). They persist in the atmosphere long enough to be dispersed globally. Although the exact lifetime of any 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.

4.8.1.2 Greenhouse Gases

GHGs are emitted by natural processes and human activities. Natural GHG sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungi; 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, 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.

4.8.1.3 Global Warming Potential

The Intergovernmental Panel on Climate Change (IPCC) 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 ($CO2_e$).

Historically, GHG emission inventories have been calculated using the GWP values from the IPCC Second Assessment Report (SAR). In 2007, the IPCC updated the GWP values, based on the latest science at the time, in its Fourth Assessment Report (AR4; IPCC 2007). The updated GWPs in the IPCC AR4 are used in recent GHG emissions inventories. In 2013, the IPCC again updated the GWP values in its Fifth Assessment Report (AR5). This was followed by the Sixth Assessment Report (AR6), which was finalized in March 2023. However, the United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines for national inventories requires the use of GWP values from the AR4. To comply with international reporting standards under the UNFCCC, official emission estimates for California and the U.S. are reported using AR4 GWP values, and statewide and national GHG inventories have not yet updated their

GWP values to the AR6 values. Therefore, this analysis was completed using the GWP values from AR4.

By applying the GWP ratios, project-related CO_2e emissions can be tabulated in MT per year. Typically, the GWP ratio corresponding to the warming potential of CO_2 over a 100-year period is used as a baseline. The atmospheric lifetime and GWP of selected GHGs are summarized below in **Table 4.8-1**, **Global Warming Potentials and Atmospheric Lifetimes**.

Table 4.8-1. Global Warming Potentials and Atmospheric Lifetimes

Greenhouse Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)		
		AR4	AR5	AR6
Carbon Dioxide (CO_2)	50 to 200	1	1	1
Methane (CH_4)	12	25	28	29.8[1/] 27.2[2/]
Nitrous Oxide (N_2O)	114	298	265	273
Sulfur Hexafluoride (SF_6)	3,200	22,800	23,500	-

1/ Fossil origin
2/ Non-fossil origin
Source: IPCC (2007, 2013, and 2021)

4.8.2 Regulatory Setting

4.8.2.1 Federal

Clean Air Act

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.

Endangerment and Cause or Contribute Findings for GHGs under the CAA

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 or 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.

Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks

In April 2010, the EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) established new standards for model year (MY) 2012 through 2016 light-duty vehicles that will reduce GHG emissions and improve fuel economy. EPA finalized the first-ever national GHG emissions standards under the CAA, and NHTSA has finalized the Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. The standards were applicable to new passenger cars, light-duty trucks, and medium duty passenger vehicles, covering MY 2012 through 2016. They required these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile in MY 2016 under EPA's GHG program, and 34.1 miles per gallon in MY 2016 under NHTSA's CAFE program, and represent a harmonized and consistent national program (EPA and NHTSA 2010).

In August 2012, the EPA and NHTSA issued final rules extending the national program to improve fuel economy for MY 2017 through 2025. These standards require vehicles to meet an estimated combined average emissions level of 163 grams of CO_2 per mile in MY 2025 under EPA's GHG program, and 49.6 miles per gallon in MY 2025 under NHTSA's CAFE program (EPA and NHTSA 2012). In August 2018, the ‘‘Safer Affordable Fuel-Efficient" (SAFE) Vehicles Rule was proposed for MY 2021–2026 passenger cars and light trucks. This rule went into effect on June 29, 2020, thereby setting new CO_2 standards for MY 2021 and later (85 *Federal Register* 40901).

In December 2021, following Executive Order 13990 (Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis), the EPA further revised the GHG emissions standards under CAA section 202(a) for light-duty vehicles for 2023 and later MY to adopt the more stringent SAFE rule standards in each MY from 2023 through 2026 (86 *Federal Register* 74434).

On April 18, 2024, EPA published a final rule, Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, that sets new, more protective standards to further reduce harmful air pollutant emissions from light-duty and medium-duty vehicles starting with model year 2027 (89 *Federal Register* 27842).

GHG and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles

In 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018 (76 *Federal Register* 57106–57513).The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent compared to the 2010 baselines. In August 2016, the EPA and NHTSA announced

the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with MY 2018 through 2027 for certain trailers, and MY 2021 through 2027 for semi-trucks, large pick-up trucks, vans, and all types of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (81 *Federal Register* 73478).

4.8.2.2 State

California Air Resources Board

The California Air Resources Board (CARB) is responsible for the coordination and oversight of State and local air pollution control programs in California. Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness about climate change and its potential for severe long-term adverse environmental, social, and economic effects. The State legislature has enacted a series of bills that constitute the most aggressive programs to reduce GHGs of any state in the nation. Some legislation, such as the landmark Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, was specifically enacted to address GHG emissions.

AB 1493

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 CARB to develop and implement regulations to reduce automobile and light truck GHG emissions beginning with the 2009 model year.

Executive Order S-3-05

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 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 CARB creates a plan (Scoping Plan), which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

AB 32 (California Global Warming Solutions Act of 2006)

The California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 to 38599) establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 required that statewide GHG emissions be reduced to 1990 levels by 2020. In 2016, statewide GHG emissions fell below the levels recorded in 1990, 4 years ahead of schedule.

SB 97

SB 97, enacted in 2007, 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.

Executive Order B-30-15, SB 32 and AB 197 (Statewide Interim GHG Targets)

California Executive Order B-30-15 (April 29, 2015) set an "interim" statewide emission target to reduce GHG emissions to 40 percent below 1990 levels by 2030 and directed state agencies with jurisdiction over GHG emissions to implement measures pursuant to statutory authority to achieve this 2030 target and the 2050 target of 80 percent below 1990 levels. Specifically, the Executive Order directed CARB to update the Scoping Plan to express this 2030 target in MT. In 2016, the Legislature passed SB 32, which codifies a 2030 GHG emissions reduction goal of 40 percent below 1990 levels. With this, the Legislature passed a companion legislation, AB 197, which provides additional direction for developing the Scoping Plan. AB 197 also requires additional GHG emissions reporting that is broken down to sub-county levels and requires CARB to consider the social costs of emissions impacts to disadvantaged communities.

California Air Resources Board Scoping Plan

To achieve the goals of AB 32, CARB adopts a Scoping Plan establishing an overall framework for the measures that would be adopted to reduce California's GHG emissions. The 2017 Scoping Plan details how the State will reduce GHG emissions to meet the 2030 target set by Executive Order B-30-15 and codified by SB 32. Other objectives listed in the 2017 Scoping Plan are to provide direct GHG emissions reductions; support climate investment in disadvantaged communities; and support the Clean Power Plan and other federal actions.

CARB's 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan; CARB 2022) was adopted on December 15, 2022. The Plan sets a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels by 2045 in accordance with AB 1279. To achieve the targets of AB 1279, the 2022 Scoping Plan relies on existing and emerging fossil fuel alternatives and clean technologies, as well as carbon capture and storage. Specifically, the 2022 Scoping Plan focuses on zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high GWP; providing communities with sustainable options for walking, biking, and public transit; displacement of fossil-fuel-fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen. The 2022 Scoping Plan sets one of the most aggressive approaches to reach carbon neutrality in the world.

AB 1279 (California Crisis Act)

In 2022, California passed AB 1279 (California Crisis Act), which introduced a statewide policy to achieve net zero GHG emissions by 2045 and maintain net negative GHG emissions thereafter. As stated previously, AB 1279 ensures that by 2045, statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels. This bill requires the state board to work with relevant state agencies to ensure that updates to the scoping plan identify and recommend measures to achieve these policy goals and to identify and implement a variety of policies and strategies that enable CO_2 removal solutions and carbon capture, utilization, and storage technologies in California, as specified.

SB 1078 (California Renewable Portfolio Standard), SB X1-2, SB 250 and SB 100

In 2002, SB 1078 established the 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. In September 2015, SB 350 was signed into law, establishing tiered increases to the RPS. The bill expanded the RPS by establishing a renewable energy goal of 50 percent of the total electricity sold to retail customers in California per year by 2030. SB 350 also established a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures. SB 100, also known as the California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases, was approved by the California legislature and signed by Governor Brown in September 2018. It declares that CARB should plan for 100 percent total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by the end of 2045. SB 100 also requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieves 44 percent of retail sales by December 31, 2024; 52 percent by December 31, 2027; and 60 percent by December 31, 2030.

4.8.2.3 Local

Colusa County General Plan

The Colusa County General Plan ("General Plan") 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 General Plan does not contain policies or objectives specific to GHGs that are applicable to the Project. However, the following General Plan policies that were included to address GHG impacts resulting from new development are related to renewable energy development and therefore relevant to the proposed Project:

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

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 and is included in Appendix D, Air Quality and Greenhouse Gas Technical Report.

For this Project, the major source of GHG is the combustion of fuel in construction equipment, in vehicles used to haul equipment and materials, in on-site trucks, 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. CO_2e resulting from SF_6 gas leakage can be represented by the following equation:

$$CO_2e \text{ Emissions} = SF_6 \text{ gas contained in equipment (lbs)} \times 0.5 \text{ percent leak rate} \times 0.0004536 \text{ MT/lb} \times 22{,}800$$

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.

Colusa County Air Pollution Control District

The CCAPCD has not yet developed thresholds of significance but has recommended using significance thresholds adopted by the Butte County Air Quality Management District (BCAQMD) due to their proximity in the SVAB. Although, BCAQMD has not adopted quantitative GHG thresholds of significance, 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.

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

Construction of the Project would increase GHG generation, which can contribute to global climate change. The Project, however, will also decrease GHG emissions by generating renewable power.

Project construction is anticipated to occur during a period of approximately 11 months and would begin in July 2025. Construction emissions would be associated with vehicle engine exhaust from construction equipment and vehicles, equipment and material deliveries, and construction worker commuting trips. CalEEMod also quantifies indirect GHG emissions from electricity consumption, which are based on location based electric and gas utility information. These emissions are considered temporary and short term. Annual Construction Emissions are provided in Table 4.8-2.

Table 4.8-2. Estimated Annual Construction Greenhouse Gas Emissions

Construction Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2025	2,302.75	0.07	0.12	2,340.95
2026	1,453.79	0.03	0.07	1,476.01
Total Project Construction GHG Emissions	3,756.53	0.10	0.19	3,816.96

Operation

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. Mobile emissions were calculated based on 3 workers per day commuting to and from the site. On-site maintenance is expected to be required occasionally following commissioning. On intermittent occasions, the presence of 5-30 workers may be required for maintenance activities. The California Emissions Estimator Model was used to calculate the annual GHG emissions based on the operational assumptions described previously. The model also calculates indirect GHG emission from electricity and water consumption. The estimated operational GHG emissions are shown in Table 4.8-3. GHG emissions from operational activities will be minimal and will not have significant impact on the environment.

Table 4.8-3. 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	231.66	0.07	0.002	0.000726	234.0

Decommissioning

The Project has an expected useful life of 35 years. If operations at the site are terminated, the facility would be decommissioned in accordance with applicable federal, state, and local regulations in effect at that time. The anticipated emissions are expected to be similar to those generated by construction activities and would be less than significant.

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 federal and state plans, policies, and regulations aimed at reducing GHGs, including emissions reductions required by AB 32 and SB 32. The Project will also help the state reach renewable portfolio standards required by SB 1078, SB XI-2, and SB 350. Although GHG emissions would be generated from construction and occasional operation and

maintenance activities, the Project would be expected to result in a net reduction in GHG emissions through the production of solar energy that would replace energy generated by fossil fuels. The Project would assist in the attainment of the state's goals by providing 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 Project also aligns with General Plan policies CON 2-2 and 2-3 to encourage the development of large-scale commercial energy projects in the County. Therefore, the Project would not conflict with applicable plans, policies, or regulations for the purpose of reducing greenhouse gas emissions and there would be no impact.

4.8.6 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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

These improvements would not generate GHG that would be significant to the environment. Nor would these improvements affect any plan, policy, or regulation regarding the reduction of GHG emissions. Therefore, the PG&E Cortina Substation improvements would have no significant impact on the criteria described for Impacts 4.8-1 and 4.8-2. No mitigation would be required.

4.8.7 Cumulative Impacts

GHG emissions are inherently cumulative. 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 assessed whether the Project would make a considerable contribution to cumulative climate change effects. As stated earlier, the project would offset GHG emissions through renewable energy generation and thereby result in environmental benefits by lessening the impacts of global climate change. Therefore, 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

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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 comments regarding Hazards and Hazardous Materials during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA.

The County reviewed and considered the Phase I Environmental Site Assessment prepared for the Project by Tetra Tech and the Tesla Megapack 2/XL Hazard Mitigation Analysis prepared by the Energy Safety Response Group for Tesla, Inc. (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 Orders and Cleanup and Abatement Orders 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 2024). 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 July 2024 (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 recognized environmental conditions (REC), 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.
- An 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 two parcels and is surrounded by sporadic rural residential, agricultural fields and undeveloped land. The Project site includes 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 the area where the existing structures are located, 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 1954, with a man-made structure used as a residential building. Documentation of surrounding areas show land improvements, including a rural homestead and agricultural uses to the south of the Project site as far back as 1954, although most of the surrounding area remained undeveloped in 1954. Land improvements to the Project site are minimal and consist mostly of dirt roads and cattle fencing.

During the site reconnaissance conducted for the Phase I Environmental Site Assessment, areas used for storage of water and petroleum products were observed in the northwestern corner of the Project site, within the corral areas, and outside of the area where Project-related activities would occur. Aboveground Storage Tanks (ASTs) were also observed in this area, just outside one of the outbuildings. The observed ASTs included waste oil, water, liquid cattle feed, and gasoline/diesel storage tanks. De minimis staining on soil was observed beneath the petroleum ASTs. De minimis is defined as:

A condition related to a release that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. A condition determined to be a de minimis condition is not a recognized environmental condition nor a controlled recognized environmental condition (Appendix G).

4.9.1.3 Solar Photovoltaic Panels

The specific type of solar PV panels that would be installed on the Project site is yet to be determined; however, it is anticipated that the proposed solar PV 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 an environmentally stable form, not the leachable form, of a metal. 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 1–3 microns thick, which could contain anywhere from 3–9 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, thereby decreasing the amount of Cd in the modules (Fthenakis 2003a).

It has been demonstrated that standard operation of CdTe PV systems does 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). The double glass design also provides enhanced tolerance for mechanical loading, reducing the likelihood of damage during construction, operations and maintenance, and decommissioning.

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 accidents (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 been 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 Arizona in 2018 for complete recycling of PV panels and internal materials, 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 claims a 90 percent recoverable rate of materials processed (First Solar 2024).

4.9.1.4 Battery Energy Storage System

Lithium-ion technology, with lithium iron phosphate (LFP) sub-chemistry, is proposed for the BESS and would include a liquid cooling system to regulate battery temperature. Selection of the lithium-ion sub-chemistry for the Project has taken 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. The LFP technology is currently the safest, most reliable, and most durable battery type on the market due to its enhanced fire-preventative design and stable chemical composition (Stapleton, Tolman; 2021). The lithium-ion battery technology for the Project will also comply with Underwriters Laboratories (UL; safety organization) 9540A testing. UL 9540A testing is performed by the battery manufacturer/vendor to prevent thermal runaway and mitigate fire risk.

The BESS would incorporate multi-tiered safety and accident prevention systems based on best management practices across the energy industry. Safety systems would incorporate passive design considerations, state of the art operational measures, and stringent maintenance standards, including, but not limited to, 24/7 remote monitoring, automatic and manual protection elements, engineering designs, site layout designs (e.g., battery container spacing and orientation), and explosion prevention protection, among other features as described below.

Passive Design Considerations

The BESS will be located more than 500 feet east of the Project boundary, past the proposed locations of the project substation, O&M building, and parking area, and will have dedicated access and perimeter roads which will allow operations and maintenance personnel, as well as emergency responders, to enter the Project site and avoid blocking vehicular access along Spring Valley Road. As outlined in the Project's Emergency Services Response Plan (see Section 2, Project Description, and mitigation measure **FIRE-1**, in Section 4.20, Wildfire), emergency responders should keep a minimum distance of 100 feet from the BESS in the event of an emergency. Additionally, the Project's fire protection design will also comply with California Fire Code Section 1207 Electrical Energy Storage Systems, which adopts the National Fire Protection Association (NFPA) Standard for the Installation of Stationary Energy Storage Systems (NFPA 855). NFPA 855 provides comprehensive criteria for the fire protection of BESS installations based on the technology used in BESS, the setting where the technology is being installed, the size and separation of BESS installations, and the fire suppression and control systems in place. Additional considerations include ventilation, detection, signage, listings, and emergency operations responding to BESS emergencies. Furthermore, the BESS would be designed in accordance with Chapter 12 of the International Fire Code as well as the National Electrical Code.

In compliance with both regulations, the battery manufacturer/vendor has obtained an independent third-party Hazard Mitigation Analysis (see Appendix G) to evaluate the consequences of a battery-related failure due to the following conditions:

- Thermal runaway condition in a single module, array, or unit;
- Failure of an energy storage management system;
- Failure of a required ventilation or exhaust system;

- Failure of a required smoke detection, fire detection, fire suppression, or gas detection system;
- Voltage surges on the primary electric supply; and
- Short circuits on the load side of the BESS.

Under all circumstances analyzed, the Hazard Mitigation Analysis found the BESS to be equipped with protection systems anticipated to effectively manage all potential fault conditions listed above.

As mentioned previously, the BESS would adhere to UL9540A and all other applicable (UL and IEC) product design standards and will be made up of multiple individual enclosures that combined make up the BESS. Breaking down the BESS into multiple enclosures provides an additional layer of protection by isolating potential adverse conditions to individual enclosures and avoiding propagation across the system. The proposed batteries, as described above, have undergone destructive unit-level tests, which have demonstrated the safe failing of battery enclosures during a fire and no propagation of fire between enclosures when placed at recommended distances. The current design considers that the BESS would have a minimum spacing between containers of twenty-one feet. This spacing is subject to change at the time of final design but will take into consideration minimum design parameters according to manufacturer and industry standards.

Monitoring & Detection

Multiple layers of monitoring and detection would be included in the BESS, including but not limited to:

- The BESS would be made up of multiple enclosures. Each enclosure will contain several battery modules, or collection of batteries, each equipped with its own Battery Management System (BMS) Additionally, a separate bus controller will supervise the functioning of each individual enclosure. The BESS would include 24/7 remote monitoring and diagnostics designed to detect upset conditions early and automatically shut down modules if any measured parameters exceed specified thresholds.

- The BMS will constantly track indicators such as temperature, gas, and smoke to provide an additional layer of protection in the event an individual module shutdown does not resolve the issue. In addition to the monitoring systems mentioned above, the BESS will incorporate technologies such as Very Early Smoke Detection Apparatus (VESDA) that continuously sample the air to detect an impending fire hazard as soon as possible and provide a warning before there is visible smoke, which is before conventional detectors would provide warnings. VESDA systems have a wide range of sensitivities allowing very small levels of smoke to be detected and responded to before a fire has time to escalate.

Automatic Protection

For electrical protection, the BESS will have several active and passive control mechanisms on the Direct Current (DC) and Alternating Current (AC) sides and can safely and automatically disconnect any battery from the rest of the Solar Facility if needed.

Internal fire suppression systems such as direct water injection have been considered but ultimately discarded due to evolving technologies and industry standards, along with best management practices that discourage the use of water directly on the battery as it may not only prolong the internal reaction that causes thermal runaway, but may also lead to contamination of the surrounding area if the water utilized is not properly contained. Current company and industry standards for fire suppression involve the use of defensive firefighting tactics to put water on the surrounding area, cooling adjacent battery enclosures, and thus avoiding the spread of the fire across enclosures and preventing its spread across the Project site (see Section 4.20, Wildfire).

Hazardous Waste

Most lithium-ion batteries on the market are likely to meet the definition of hazardous waste by the U.S. Environmental Protection Agency (USEPA) under the Resource Conservation and Recovery Act (RCRA), and when discarded, would likely be considered ignitable and reactive hazardous wastes. Some discarded Lithium-ion batteries are more likely to have hazardous properties if they contain a significant charge, yet such batteries can appear to the user to be completely discharged. The Project's Emergency Services Response Plan (see Section 2, Project Description, and mitigation measure **FIRE-1**, in Section 4.20, Wildfire), would include safe handling guidelines and procedures for ensuring any damaged equipment has been properly de-energized or, alternatively, for handling batteries that may still be energized.

Taking these properties into consideration, the USEPA recommends that businesses consider managing all types of Lithium-ion batteries under the federal "universal waste" regulations in 40 CFR Part 273. Universal waste regulations require that the waste be sent to a permitted hazardous waste disposal facility or a recycler (USEPA 2024). Ultimately, there are many options to properly manage the disposal of used lithium-ion batteries including reclamation by battery manufacturers.

On October 23, 2023, the USEPA announced a new rulemaking effort to improve the recycling and management of end-of-life solar panels and lithium batteries. The USEPA is developing a proposed rule to add solar panels to the universal waste regulations and to add tailored universal waste standards for lithium batteries. The USEPA is also working on adjustments within the universal waste regulations to improve safety standards and reduce fires from mismanaged end-of-life lithium batteries (USEPA 2024).

4.9.2 Regulatory Setting

4.9.2.1 Federal

Hazardous Materials Transportation Uniform Safety Act

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.

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.

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.

Toxic Substances Control Act and Resource Conservation and Recovery Act

The Federal Toxic Substances Control Act of 1976 and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by 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.

Occupational Safety and Health Act

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.

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 2024). 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

Health and Safety Code § 25404 et seq.

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 2024a).

Health and Safety Code § 25500 et seq. 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 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 2024). 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.

Health and Safety Code § 25100 et seq.

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 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.

Health and Safety Code § 41700

Health and Safety Code section 41700 provides that “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.”

Occupational Safety and Health Act of 1973

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).

California Code of Regulations

The California Code of Regulations (CCR) contains additional requirements that would apply to the Project, including:

- 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.
- 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.
- 22 CCR § 66273 Standards for Universal Waste Management, which regulate the management of universal wastes. These wastes are not fully regulated as hazardous waste 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.

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 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*.

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.

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 Sonoma Lake-Napa unit, which includes the Project site, fire season has been identified as beginning on June 17 in 2024 (CAL FIRE 2024a). 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. Key sections of the Public Resources Code include:

- 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.

- Public Resources Code Section 4102 provides that in CAL FIRE designated SRA, the State is financially responsible for the suppression and prevention of wildfires (Public Resources Code § 4102). Its designated SRAs 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 an SRA (Colusa County 2018).

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:

- Improve core capabilities.
- Enhance internal operations.
- Ensure health and safety.
- 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). CAL FIRE is currently updating the 2019 Fire Plan to build on the 2019 goals and objectives and is scheduled to finalize the updated plan in 2024 (CAL FIRE 2024b).

State of California Emergency Plan

The California Governor's Office of Emergency Services (Cal OES) developed the State of California Emergency Plan (Cal OES 2024) 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 Cal OES, which coordinates the responses of other agencies.

4.9.2.3 Local

Colusa County General Plan

The Safety Element of the Colusa County General Plan outlines the 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 objectives and policies of the Safety Element were included in the General Plan relevant to the Project:

Goal SA-1: *Ensure the safety of County residents, businesses, and visitors from hazardous conditions, including natural catastrophes and human-caused emergencies.*

Objective SA 1-B: *Ensure that Planning and Development Procedures Identify and Mitigate Potential Hazards*

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.

Objective SA 1-C: *Reduce Risks to Human Life and Property from Seismic and Geological Hazards.*

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.

Objective SA 1-G: *Minimize Risks to Human Life and Property from Fire in both Developed and Undeveloped Areas of the County.*

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.

Objective SA 1-H: *Minimize Risks to Residents and the Environment from Hazardous Materials and Waste.*

Policy SA 1-48: Require 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.

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 Local Hazard Mitigation Plan (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). The draft 2024 LHMP is available on the Colusa County website and final comments were due on August 21, 2024. The draft 2024 LHMP includes an updated list of hazards, assesses the likely impacts of these hazards to the people and assets the County planning area, and establishes updated goals and mitigation projects to reduce the impacts of future disasters on people and property, critical facilities and infrastructure, the environment, as well as to local economies; although the 2024 LHMP does not address hazards potential resulting from BESS and solar farms (Colusa County 2024b). The 2024 LHMP has not been finalized as of the date of publication of this draft EIR.

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 electrical 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 BMP and other measures contained within the required Stormwater Pollution 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 Draft EIR. Safety data sheets for all applicable materials present at the site would be made readily available to on-site personnel.

Batteries would be delivered to the Project site in DOT-certified vehicles and in compliance with all applicable requirements of the DOT, CHP, and California DMV. Lithium-ion batteries are classified as a Class 9 hazardous material and therefore must meet DOT Hazardous Material Regulations (49 Code of Federal Regulations [CFR] §§ 171-180). In addition, under UN3536 “Lithium batteries installed in cargo transport units,” (United Nations 2019) the batteries must be securely attached to the interior structure of the cargo unit (e.g., Conex-type shipping container), the batteries must pass UN38.3 tests that prevent overcharge and over discharge between batteries, and no additional hazardous cargo is allowed that is not directly related to the transport of the batteries. UN38.3 compliance allows certification for safe transport in air, land, or sea.

According to the study “Comparative Risks of Hazardous Materials and Non-Hazardous Materials Truck Shipment Accidents/Incidents” by Battelle (Battelle 2001), the hazardous material

accident/incident rate per mile (road miles only) for all Class 9 hazardous materials is 1.09 in 1 million. This statistic includes en route incidents and all Class 9 hazardous materials, of which lithium-ion batteries make up only a portion. This indicates the worst-case probability of an accident occurring during lithium battery transportation to the Project site would be approximately 1 accident per million miles traveled. There would be a one-time transport of batteries to the Project site, then very infrequent transport of batteries for the lifetime of the Project. Thus, the infrequent shipping, containerized shipping, low probability of accident/incident, and multiple regulations that control the shipping of lithium-ion batteries would make impacts associated with routine transport and foreseeable upset or accidents involving the release of hazardous materials less than significant as related to the proposed BESS.

Based on the foregoing, Project construction would result in a less than significant impact relating to the creation of a potentially 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 on-site substation would include transformers, breakers, switches, meters, and related equipment.

O&M activities associated with a solar PV facility are 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 hazardous materials business plan (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 Project 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. 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 2024). 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 2024). Studies indicate that standard operation of CdTe PV systems does not result in cadmium emissions to air, water, or soil (Fthenakis 2003b). 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 been 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 be contained within metal enclosures within the BESS, which would be located adjacent to the on-site substation. During Project operation, some battery cells may require replacement throughout the life of the Project. As described above in Section 4.9.1.4, most lithium-ion batteries are likely to meet the definition of hazardous waste by the USEPA under the RCRA. Accordingly, the USEPA recommends that businesses consider managing Lithium-ion batteries under the federal “universal waste” regulations in 40 CFR Part 273. Universal waste regulations do not require shipment using a hazardous waste manifest but do require that the waste be sent to a permitted hazardous waste disposal facility or a recycler. All batteries replaced throughout the life of the Project would be recycled or disposed of in accordance with the applicable hazardous waste requirements. Ultimately, there are many options to properly manage the disposal of used lithium-ion batteries, including reclamation by battery manufacturers, and batteries would not be disposed of in municipal landfills.

Transformers would contain dielectric insulating fluid in the form of vegetable or mineral oil and would not be routinely 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.

Decommissioning

During the Project decommissioning and site restoration process, all Project structures would be removed. 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. As also discussed above, all batteries disposed of at the end of their useful life would be recycled or disposed of in accordance with the applicable hazardous waste requirements. Ultimately, there are many options to properly manage the disposal of used lithium-ion batteries, including reclamation by battery manufacturers, and batteries would not be disposed of in municipal landfills. 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.

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, CRECs, or HRECs on-site (Appendix G), and there are no LUSTS or Cleanup Program sites documented within 7 miles of the Project (SWRCB 2024), 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

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 on-site 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 an HMBP under specified circumstances.

Hazardous materials are unlikely to be released during any accidental breakage of the PV panels because panels 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, CdTe would dissolve into 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 degrees Fahrenheit (°F). Burning in the California annual grassland, unless woody debris and accumulated mulch are present, results in soil surface temperatures less than 200°F (Bentley and Fenner 1958), well below the melting point for CdTe. 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).

The BESS would use lithium-ion batteries, which contain flammable and corrosive liquid materials, however, during charging, discharging, and normal operations, the lithium-ion batteries would not release any flammable gases (see Appendix G). The potential for hazardous materials to be released during an accidental breakage of the batteries does exist, but the risk is minimized by the design of the system and compliance with applicable codes and industry standards (see the BESS design and safety features detailed in Section 4.9.1.4 above). The batteries would be housed in multiple self-contained, prefabricated storage system enclosure units equipped with cabinet-level monitoring systems. The monitoring systems would provide 24/7 remote monitoring and diagnostics which are designed to detect upset conditions early and automatically shut down batteries if any measured parameters exceed specified thresholds. All batteries within the BESS would be contained within specifications that adhere to applicable federal, state, and local requirements, including the inclusion of appropriate ventilation, acid-resistant materials, and the presence of spill protection supplies. Enclosures used to store hazardous materials would also be inspected regularly for any signs of failure or leakage. Accordingly, impacts during the

operational phase relating to accidental or upset conditions and associated risks to public health or the environment will be less than significant.

In the unlikely event of a battery cell malfunction, such as a thermal runaway event, a fire could occur. In third-party UL 9540A destructive testing, an intentional thermal runaway event found that visible flames outside of a battery cabinet would be unlikely, and any flaming would be unlikely to be sustained. Additionally, no heat fluxes were recorded at distances of up to 20 to 30 feet from the battery cabinet; explosion hazards, including deflagration, projectiles, flying debris, detonation, or other explosive discharge of gases were not observed; fire propagation to adjacent cabinets spaced 6-inches apart and 8-feet apart was not observed; no integral fire suppression nor manual fire suppression (hose lines) was required to stop cabinet to cabinet fire spread; and no free-flowing liquid runoff was observed after the test (see Appendix G). Additionally, in the third-party Hazard Mitigation Analysis (Appendix G), an intentional worst-case scenario catastrophic failure event was initiated, resulting in smoking, followed by visible flames up to approximately 11.5 feet high and 3.3 feet wide at peak flame intensity, and a sustained fire that slowly spread to adjacent battery bays before burning itself out. Only half of the battery cabinet was burned. Additional fire propagation modeling was conducted for more severe events and showed that a fire was unlikely to spread from one BESS unit to another even during worst-case scenario wind conditions (Appendix G).

Generally, the battery cell will start to off-gas through pressure relief vents (or pouch seams) if the temperature exceeds 120°C or 248°F (DNV GL 2017); however, the battery will not enter thermal runaway until it exceeds the thermal runaway onset temperature, which the manufacturer's UL 9540A testing determined to be between 174°C and 239°C (345°F and 462°F, respectively) (see Appendix G). In the event of a thermal runaway event, the manufacturer's guidance on emergency response, including hazardous materials, would be followed.

While current systems are designed to contain fires within a single battery module, if a fire does occur, pollutants could be emitted into the atmosphere. Lithium-ion battery system fires are generally considered Class A (plastics fires, from materials such as the separator) and Class B (flammable liquids, from materials such as the electrolyte) but may also have characteristics of Class C (electrical fires) as well. As such, the pollutants generated are not dissimilar from other common residential and commercial fires. In the unlikely event of a fire, the primary emissions released would be carbon dioxide (CO_2) and carbon monoxide (CO), along with lesser amounts of other compounds. Based upon publicly available testing data (DNV GL 2017), there are four hazardous substances that are potentially released during an accidental event within a BESS that may have an impact on nearby receptors. The hazardous substances include hydrogen chloride (HCl), hydrogen fluoride (HF), hydrogen cyanide (HCN), methanol, styrene, toluene, and carbon monoxide (CO). Additional third-party analysis of manufacturer testing from a battery having undergone combustion found that at locations 20 feet upwind and 5 feet downwind, no traces of mercury were present over the entire 2.5-hour test duration. Hydrogen fluoride (HF) was detected at values of 0.10 and 0.12 parts per million (ppm) in the two sampling locations over the course of the test, however, these levels are far below the accepted National Institute for Occupational Safety and Health (NIOSH) Immediately Dangerous to Life or Health (IDLH) value of 30 ppm for HF. They are also below the NIOSH threshold for HF of 3 ppm averaged over a 10-hour work shift and 6 ppm not to be exceeded during any 15-minute work period; and also below the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit value (TLV)

of 0.5 ppm averaged over an 8-hr work shift and 2 ppm not to be exceeded during any part of the work exposure. The detected levels of emissions from a thermal runaway event show that the levels of HF would not pose a hazard to emergency response personnel and would not cause ingress/egress to be suspended along Spring Valley Road, at 500 feet west of the proposed BESS facility.

On a system level, the BESS 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 BESS facilities 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. Potential impacts to wildfire are discussed in Section 4.20, Wildfire.

Combustible vegetation within the Project boundary would be routinely maintained by the Applicant during operation of the Project in accordance with the Vegetation Management and Wildfire prevention Plan. 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 and conducted 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.

Decommissioning

The closure, decommissioning, and site restoration process is summarized under Impact 4.9-1, above. Many components of the Solar Facility and BESS 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. 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. See Section 4.18, *Utilities and Service Systems*, for information about landfill capacity. The batteries would be recycled or disposed of in accordance with the applicable hazardous waste requirements. Ultimately, there are many options to properly manage the disposal of used lithium-ion batteries, including reclamation by battery manufacturers, and batteries would not be disposed of in municipal landfills. As otherwise described under Impact 4.9-1, impacts relating to decommissioning will be less than significant.

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 and, as such, there would be no impact.

IMPACT 4.9-4: *Would the project be located on a site which is included on a list of hazardous materials sites 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 2024). As a result, there would be no impact.

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.

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 with Mitigation)**

The Project is located in a High Fire Hazard Severity Zone (FHSZ) within the State Responsibility Area (SRA) and is approximately 1.2 miles from the nearest Very High SRA (CAL FIRE 2024c). The primary fire protection services in the vicinity of the Project site are provided by the Williams Fire Protection Authority (WFPA). However, CAL FIRE is responsible for providing wildland fire protection, fire prevention, and resource management within SRA lands throughout California.

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 line), 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 fire prevention features such as those mentioned in Section 4.9.1.4, Battery Energy Storage System - Passive Design considerations above. The Project would also implement mitigation measure **FIRE-1**, Wildland Protection Measures, which would include a Vegetation Management and Wildfire Prevention Plan to be approved by the WFPA, as well as an ESRP to be approved by the WFPA and County (see Section 4.20, Wildfire). 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. Refer to Section 4.20, Wildfire, for additional information with regard to wildfire impacts.

4.9.5 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

These improvements would have minimal impacts to hazardous materials. There are no schools within a 0.25-mile radius of the Project site or the PG&E Cortina Substation, and the improvements are not likely to emit any hazardous emissions that could impact any existing or proposed schools. Nor would these improvements interfere with any airports, as there are no airports within a 2-mile radius of the Project site or the PG&E Cortina Substation. Given the height of the existing transmission line and associated infrastructure in the immediate vicinity of the improvements, the additional 15-foot pole height increase would also not interfere with any local

agricultural aircraft or agricultural operations, as they already have to be avoided. They are also not likely to create additional challenges to agricultural operations, as they are existing poles. 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, the PG&E Cortina Substation improvements would have no significant impact on criteria described for Impacts 4.9-1 through 4.9-7. No mitigation would be 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 solar PV and BESS projects generally do not cumulatively contribute with the impacts of other projects because of the relatively low quantities used and stored at solar PV and BESS 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

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4.10 HYDROLOGY AND 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 comments regarding Hydrology and Water Quality Resources during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA.

4.10.1 Existing Conditions

4.10.1.1 Regional Setting and Climate

The Project lies within the northwestern Sacramento Valley, in 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 (CGA 2024). The Project site is 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 2024).

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 2024).

The climate in Colusa County consists of cool, wet winters and hot, dry summers. There is wide variation in the annual precipitation, with 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 overall temperature was 61.1 degrees Fahrenheit. The average annual rainfall in the same period was approximately 14.1 inches, with the highest rainfall, 21.45 inches, in 2010 and the lowest rainfall, 6.73 inches, in 2015. The annual rainfall fluctuated significantly because of the 2007 to 2015 dry period (NCEI 2024).

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 a flood 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 2024).

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

4.10.2.1 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 (RWQCB), 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); 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 Section 402 of the Clean Water Act, the National Pollution Discharge Elimination System (NPDES) stormwater permitting program controls water pollution by regulating point sources of pollution within waters of the United States. The Central Valley 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 2022-0057-DWQ, NPDES No. CAS000002, which supersedes Order 2009-0009-DWQ 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 Project 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. Such practices would include, for example, 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. 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 maintained.

In addition to stormwater discharges, the Construction General Permit also covers 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 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.
- The discharger reports the sampling information in the SWPPP Annual Report.

Implementation of a SWPPP and compliance with the Construction General Permit requirements, would ensure that no pollutants or sediment discharge from the Project site enter into the drainage system.

Federal Emergency Management Agency

The 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 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. These 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.

4.10.2.2 State

California Fish and Game Code Section 1602

Section 1602 of the California 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). The CDFW jurisdiction over lakes and streams extends 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, and 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 proposed Project is within 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 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 involves 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 § 10720 et seq.) provides a framework for sustainable management of groundwater resources in California. In groundwater basins designated by the California Department of Water Resources as medium or 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 Colusa Subbasin 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 was completed in January 2022. In October 2023, the state Department of Water Resources gave the Colusa Subbasin GSP an "incomplete" determination, with several areas of corrections identified. The Revised GSP was updated April 2024 (CGA 2024).

4.10.2.3 Local

Colusa County General Plan

The Colusa County General Plan ("General Plan") 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). General Plan policies related to development impacts to Hydrology and Water Quality Resources that are relevant to the proposed Project include:

Goal SA-1: *Ensure the safety of County residents, businesses, and visitors from hazardous conditions, including natural catastrophes and human-caused emergencies.*

Objective SA 1-D: *Take Appropriate Steps to Reduce the Risks to Life, Property, and Public Services Associated with Flooding.*

Policy SA 1-27: Maintain adequate lands that 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 1-30: Ensure that construction activities will not result in adverse impacts to existing flood control and drainage structures.

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 event.

Policy SA 1-36: Encourage flood control measures that respect natural drainage features, vegetation and natural waterways, while still providing for adequate flood control and protection.

Goal CON-1: *Conserve and protect Colusa County's ecosystem.*

Objective CON-1D: *Protect Surface Water Quality in the County's Lakes, Streams, Creeks and Rivers.*

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 stormwater retention features and implement feasible BMPs to reduce site runoff and provide for natural removal of water pollutants.

Action CON 1-F: Continue to require implementation of the County's Grading Ordinance. Review projects to ensure that BMPs are implemented during construction and site grading activities as well as in project design to reduce pollutant runoff into water bodies.

Objective Con-1E*: Ensure a Sustainable and Long-Term Supply of Safe and Reliable Water to Support the Needs of County Residents, Businesses, and Agricultural Operations.*

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.

4.10.2.3.1 Colusa County Zoning Code

Section 44.2-20.20 of the Colusa County Zoning Code requires that uses in the agricultural zone comply with a performance standard that there is no net increase in offsite drainage flows, including peak flows during a storm event, and water quality measures shall be implemented to reduce stormwater pollutants.

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 site or off site?*

   ii) *Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on site 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 zone, and risk release of pollutants due to the project inundation?*

e) *Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

The thresholds of significance are discussed in further detail below.

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 during 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, they 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 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 Construction General Permit and Section 44.2-20.20 of the Colusa County Zoning Code which requires there is no net increase in offsite drainage flows, including peak flows during a storm event, and water quality measures shall be implemented to reduce stormwater pollutants. 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. Such practices would include, for example, 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.

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 (SPCC), and other measures specified within the required SWPPP.

With implementation of the NPDES General Construction Permit conditions, including the preparation and implementation of a SWPPP, SPCC, and associated BMPs, the impact on water quality during construction would be temporary and less than significant.

Operation and Maintenance

Typical non-potable water use during operation and maintenance would be for washing photovoltaic (PV) solar panels and other general maintenance and is estimated to be approximately 1 acre-foot/year (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 (compressed gas). Any hazardous materials stored on site in exceedance of the established thresholds 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 potential impacts similar to 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, which would include the preparation and implementation of a SWPPP. Stormwater management measures to effectively control erosion and sedimentation and other construction related pollutants during decommissioning would be required to be identified and implemented. 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 666 acres. There are no public water services within the Project boundaries. Natural vegetation on-site consumes water, which may be lost to the atmosphere due to transpiration from leaves, in addition to evaporation from the soil surface. As described in the 2021 Water Supply Assessment (WSA), included as Appendix H-1, the existing water demand of the natural vegetation which would be removed was estimated to be 440 AF per year.[1] However, because the proposed Project footprint is reduced approximately 13 percent compared to the original acreage analyzed in the WSA, the existing water demand of the natural vegetation on the Project site is estimated to be approximately 383 AF per year, as described in the Addendum to the WSA (Appendix H-2).

The PV solar facility would require a minimal amount of water for construction and operational use. Most of the water demand would occur during construction, with very little water required for annual operational uses. During construction, water would be used to keep the dust down and condition the soil for compaction. Adequate soil moisture would need to be maintained for proper compaction, as the soil would act as a subbase for concrete foundation. For the construction phase, it is estimated the Project would require 40 AF of non-potable water over a period of 11 months. Additionally, some of the natural vegetation would be cleared for the PV solar facility, which may result in a higher percent of return water available for construction than the return of water from evapotranspiration.

To operate the PV solar facility, a small amount of water would be used incidentally for panel washing; panel washing is not required regularly and would 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 1 AF.

Based on a conservative assumption that 15 percent of the vegetation on the Project site would be removed, and as described in the Addendum to the WSA, the water required for construction is significantly lower than the estimated water currently required for the natural vegetation (approximately 383 AF), which would result in a reduction of water consumption of approximately 343 AF during the construction period of 11 months, which is estimated to require 40 AF of non-potable water. After construction, Project water consumption would be reduced even further, as

[1] The 2021 WSA was previously prepared for a larger footprint of 768 acres. The proposed Project footprint has a slightly smaller water demand as the footprint has been decreased to 666 acres.

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 382 AFY.

The overall reduction in water consumption at the Project site would provide a benefit to the Subbasin. The Colusa Subbasin would not be negatively impacted by the construction and operation of the Project and impacts would be less than significant.

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 it would include minimal impervious surfaces for concrete pads for BESS and the substation. Solar panels would be mounted on steel posts that range between 6 to 13 feet above grade and would be separated by a sufficient distance pursuant to design parameters. The solar panels are not considered impervious surfaces because the solar panels tilt to track the sun, any rainwater falling on their surfaces would slide off and infiltrate the surrounding ground surface. 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 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 the 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 the 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. Such practices would include, for example, 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.

Because the Project would introduce minimal stationary 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. During construction of the Project, increased potential for erosion or siltation and runoff at the Project site could introduce contaminants and other pollution into surrounding waterways. Compliance with the NPDES Construction General Permit, and associated SWPPP and BMPs, and with Section 44.2-20.20 of the Colusa County Zoning Code which requires there is no net increase in offsite drainage flows, including peak flows during a storm event, and water quality measures shall be implemented to reduce stormwater pollutants 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 construction 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 (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. Thus, there would be no impact from 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 conflicting 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, and the final draft was released in January

2022. However, the DWR gave the Colusa Subbasin GSP an “incomplete” determination and identified several areas where corrections were needed. The Colusa Groundwater Authority addressed the concerns from the DWR, and the revised GSP was resubmitted April 2024. Because the water required for construction, decommissioning, and operations is significantly less than the estimated water currently required for the natural vegetation that would be removed, it is not anticipated to conflict with or obstruct implementation of the GSP. The Project would not substantially increase impervious surface area; thus, groundwater recharge would be maintained at the Project site.

4.10.5 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project’s gen-tie line that would extend from the Project’s point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project’s bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project’s gen-tie line.

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 PG&E 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.

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 the 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 location in a flood hazard, tsunami, or seiche zone, and 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, could 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 would be temporary and short-term. Groundwater pumping would be regulated by the Basin Plan and the future GSP, which is currently being finalized (but is not yet adopted). The water required for construction, decommissioning and operation of the Project is significantly lower than the estimated water currently required for the natural vegetation that would be removed as part of the Project, 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 within the Project, and it would not contribute to cumulatively considerable impacts to groundwater.

4.10.7 References

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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 comments regarding Land Use and Planning during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA.

4.11.1 Existing Conditions

The proposed Project would be located on two parcels totaling approximately 886 acres of private property currently used for cattle grazing in unincorporated Colusa County, California. The Project site is designated as Agriculture Upland (AU) by the County's General Plan and zoned as Foothill Agriculture (F-A). The gen-tie line intersects land designated as AU and Agriculture General (AG) and zoned as F-A and Exclusive Agriculture (E-A). The Project site is designated as Farmland of Local Importance but is not considered to be Prime or Unique farmland. See Section 4.02, *Agricultural and Forestry Resources*, for additional information.

Only an estimated 666 acres of the approximately 886-acre site would be used for the Project. The Project site is surrounded by sporadic rural residential, agricultural fields, and undeveloped land. Spring Valley Road runs adjacent to the Project site from north to south. The gen-tie line follows Spring Valley Road north to Walnut Drive and follows Walnut Drive to the PG&E Cortina Substation. The nearest community to the Project site is the City of Williams, approximately 6.5 miles to the northeast. The Project site lies within the jurisdiction of Colusa County, and land uses on the Project site are governed by the Colusa County General Plan and Zoning Code.

4.11.2 Regulatory Setting

4.11.2.1 State

California Land Conservation Act of 1965

The California Land Conservation Act of 1965 (Williamson Act, Government Code § 51200 et seq.) aims to prevent the conversion of farmland 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 landowners to voluntarily enter into contracts to retain land in an agricultural preserve[1] for agricultural or open space uses for a period of at least 10 years and, in return, to pay reduced property taxes. The Project site is subject to a Williamson Act contract, as discussed in Section 4.02, *Agriculture and Forestry Resources*.

[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.

4.11.2.2 Local

Colusa County General Plan

The Colusa County General Plan ("General Plan") 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 Project site is designated in the General Plan as "Agriculture Upland," in which cultivated agriculture, livestock and animal keeping, industrial and commercial agriculture, agricultural tourism, low-intensity recreation, resource production (including timber and mining), energy production (including solar), single family residential, and farmworker housing are allowed and appropriate uses (see Colusa County General Plan Land Use Element Table LU-1). The gen-tie line from the Project site intersects land designated as Agriculture Upland and Agriculture General. No overlay designations, regional plans, community plans, or specific plans described in the Colusa County General Plan apply to the Project site.

General Plan policies related to Land Use and Planning that are relevant to the proposed Project include:

Goal AG-1**:** *Preserve and protect agricultural land.*

Objective AG 1-A**:** *Recognize that Agricultural Land is the County's Greatest Natural Asset and Take Appropriate Measures to Restrict the Conversion of Agricultural Lands to Nonagricultural Uses.*

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 certain criteria are met*].

Goal AG-2: *Maintain and enhance agriculture as the County's most critical land use, economic sector, and resource.*

Objective AG 2-A**:** *Expand Opportunities for Economic Development and Increased Agricultural Production by Allowing Agricultural Processing Facilities and Uses Directly Supporting Agriculture in All Agricultural Land Use Categories.*

Action AG 2-A: Revise the Zoning Ordinance to allow agricultural support facilities as a principal permitted use on lands designated for agricultural use. The revision to the zoning ordinance shall establish definitions and standards in the Zoning Ordinance that differentiate between facilities that support agricultural uses, such as those directly necessary for processing, packaging, distribution, and on-site energy production, and those facilities that are industrial or commercial in nature and do not directly support agricultural activities and are not appropriate for development, without a Conditional Use Permit, in an agricultural zoning classification. The revisions shall identify performance standards that agricultural support facilities permit requests shall comply with, including [*list of standards*].

Objective AG 2-B**:** *Allow Limited Recreation and Resource Production Uses on Agricultural Lands While Ensuring that Such Uses Do Not Adversely Affect Agricultural Activities.*

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.

Action AG 2-D: Revise the Zoning Ordinance to define alternative energy and to develop performance standards for energy-generating and resource extraction uses on agricultural lands. These performance standards shall address environmental impact mitigation and compatibility with surrounding land uses, including but not limited to:

a. Hours of operation
b. Maximum noise levels
c. Maximum daily trips
d. Setbacks
e. Lighting
f. Water and sewer demand
g. Flood management
h. Landscaping
i. Drainage infrastructure
j. Roadway and access improvements
k. Fire protection

Goal LU-2**:** *Maintain Agriculture as the Paramount Land Use in the County and Ensure Land Use and Planning Decisions Support a Strong Agricultural Economy*

Objective LU-2A**:** *Only Permit Development on Agricultural Land that will Not Interfere with Viable Agricultural Operations.*[2]

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.

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 2-2: Encourage the development of large-scale commercial energy projects that utilize renewable sources such as solar, wind, biomass, and agricultural byproducts.

[2] Note that the General Plan contains two Objectives labeled "LU 2-A," and this Objective is the second labeled as such on page 8-19 of the Land Use Element.

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.

Action CON 2-A: Amend the Zoning Ordinance to streamline permitting and provide clear development standards for the production of biofuels, biomass, solar, wind and other energy alternatives to reduce dependency on fossil fuels.

Colusa County Zoning Code

The Project site is in Colusa County's Foothill Agriculture (F-A) zone, and the gen-tie line from the Project site intersects land zoned as F-A and Exclusive Agriculture (E-A) (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 (Colusa County Zoning Code § 44-2.20.30). As detailed in the Greenhouse Gases section of this DEIR (Section 4.8), this use permit provision was adopted to implement General Plan Policies CON 2-2 and 2-3 that were developed in the 2030 General Plan DEIR as mitigation measures to mitigate potentially significant impacts from increased stationary source emissions of new development allowed by the 2030 General Plan. Alternatively, if a parcel is subject to an Energy Production (EP) Overlay Zone, energy generation for off-site use is permitted with a Minor Use Permit (Colusa County Zoning Code § 44-2.80.020). As of the date of publication, the County has not yet adopted any EP Overlay Zones allowing for expedited permitting (i.e., via approval of a Minor Use Permit by the County Zoning Administrator) for energy generation for off-site use. Because no EP Overlay zone applies to the Project site, 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 in a rural area in an unincorporated part 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.

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)**

The Applicant has filed a Use Permit application (PD-24-24) to construct, operate, maintain, and decommission the Project. The County must process the Use Permit application for the Project in accordance with section 44-1.080.030 ("Use Permits") of the Zoning Code, which requires certain findings and conditions of approval. The Project is consistent with applicable provisions of the Colusa County General Plan and Zoning Code, and compliance with conditions of approval for the Use Permit would further 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.

Colusa County General Plan

For example, the Project is consistent with **Policy AG 1-2** because the Project does not require a General Plan amendment or zoning change, as energy generation for off-site use is permitted with a Use Permit under the County's existing General Plan and zoning controls. The Project site would therefore remain designated for agriculture and not rezoned or redesignated to an urban use. Rather, and consistent with the General Plan and the County Code, the Project would implement a conditionally permitted use. The Project is consistent with **Policy AG 2-5** because it involves development of a solar farm (enumerated in Policy AG 2-5 as an agricultural related industry the County seeks to encourage and support) while maintaining the landowner's existing livestock grazing operation on other portions of the property. The Project is also consistent with **Policy LU 2-11** because it involves development of large-scale commercial solar energy production with a Use Permit on non-prime agricultural land.

As previously mentioned, the 2030 Colusa County General Plan Draft Environmental Impact report contained an analysis of the air emissions that would be produced as the County's economy grew through new development, particularly industrial, agricultural, and commercial uses. That DEIR concluded that the net change would be an increase in stationary source emissions in Colusa County. **Policies CON 2-2** and **CON 2-3** were developed and included in the DEIR to specifically address air quality impacts resulting from new development and allow for commercial alternative energy facilities, including solar and biomass in the Agriculture General, Agriculture Upland, Industrial, and Resource Conservation land use designations with a Conditional Use Permit in an effort to benefit overall air quality. With respect to other General Plan agricultural support policies, including General Plan **Goal AG-2** (Maintain and enhance agriculture as the County's most critical land use, economic sector, and resource) even the complete removal of the cattle operations that are occurring on the Project site would have a negligible impact on the County's agricultural economy due to the following factors:

- The Project is not located on prime agricultural soils and is being used for dry land ranching operations. There are approximately 170,000 acres in dryland pasture (Colusa County 2022) and the removal of the Project's approximate 886 acres is approximately 0.52 percent of this acreage.
- In 2021, cattle ranching overall in the County resulted in just over 2.7 percent of the overall agricultural economic activity in the County (Colusa County 2022). Thus, loss of 886 acres,

or 0.52 percent of the total dryland pasture, would resulted in a reduction of overall agricultural economic activity of just 0.014 percent County-wide.

- In 2022, with the impact of the drought, cattle operations represented approximately 5 percent of the total agricultural activity in the County (Colusa County 2022). Even with this increase in the percentage of dryland grazing acreage due to a reduction in other agricultural production, such that loss of 886 acres of cattle grazing land associated with the Project site would result in the reduction of agricultural economic activity 0.026 percent County-wide.
- When the 2014 Zoning Ordinance Update was approved, there was over 240,000 acres of other land zoned the F-A zoning designation (Colusa County 2014). Accordingly, the Project site represents 0.37 percent of County-wide of F-A zoned property.

Colusa County Zoning Code

The Project site is zoned F-A and the gen-tie line from the Project site intersects land zoned as F-A and E-A. Energy generation for off-site use is permitted within the F-A and E-A zones with approval of a Use Permit (Colusa County Zoning Code § 44-2.20.30). Therefore, the Project is consistent with the Zoning Code, and compliance with conditions of approval for the Use Permit would further ensure the Project would not conflict with the underlying F-A and E-A zones.

[See next page for **Table 4.11-1: Consistency Analysis**]

Table 4.11-1. Consistency Analysis with Colusa County General Plan for Land Use

Goals and Policies	Consistency Determination	Project Consistency
Chapter 2. Agriculture Element		
Goal AG-1: Preserve and protect agricultural land.		
Objective AG 1-A: Recognize that Agricultural Land is the County's Greatest Natural Asset and Take Appropriate Measures to Restrict the Conversion of Agricultural Lands to Nonagricultural Uses	Consistent	As discussed in Section 4.02, *Agriculture and Forestry Resources*, the Project site is not on land classified as Prime Farmland or Farmland of Statewide Importance. The Project does not involve any rezoning or redesignation of land to a nonagricultural use. While the Project would involve the temporary siting of solar panels on agricultural land, it would not impact existing or reasonably foreseeable future agricultural uses. Following construction of the Project, the landowner will continue its existing grazing operation on other portions of the property and will graze a similarly sized herd notwithstanding the proposed Project. At the end of the Project's life, the Project site would be decommissioned and returned to its current state.
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 certain criteria are met*].	Consistent	The Project site is zoned F-A, and the gen-tie line from the Project site intersects land zoned as F-A and E-A. Zoning Code § 44-2.20.30 allows for energy generation for off-site use with a Use Permit within the F-A and E-A zones. Therefore, the Project would not require a zone change and would remain designated for agriculture, consistent with Policy AG 1-2. Compliance with conditions of approval for the Use Permit would further ensure the Project would not conflict with the underlying F-A and E-A zones.
Goal AG-2: Maintain and enhance agriculture as the County's most critical land use, economic sector, and resource.		
Objective AG 2-A: Expand Opportunities for Economic Development and Increased Agricultural Production by Allowing Agricultural Processing Facilities and Uses Directly Supporting Agriculture in All Agricultural Land Use Categories.	Consistent	The Project would not interfere with the County's ability to allow agricultural processing facilities and uses directly supporting agriculture in Agricultural Land Use Categories, nor would the Project interfere with the County's ability to expand opportunities for economic development and increased agricultural production. The Project would be consistent with the underlying zoning and land use designation with approval of a Use Permit, as discussed above under the consistency analysis for Policy AG 1-2. Furthermore, the Project would be consistent with the Williamson Act as it would allow for the existing grazing operation to continue on the landowner's remaining land, and it would not impede other surrounding land under separate Williamson Act contracts. See Section 4.02, *Agriculture and Forestry Resources*, for further information on Williamson Act compatibility.
Action AG 2-A: Revise the Zoning Ordinance to allow agricultural support facilities as a principal permitted use on lands designated for agricultural use. The revision to the zoning ordinance shall establish definitions and standards in the Zoning Ordinance that differentiate between facilities that	Consistent	Subsequent to the adoption of the General Plan, the County implemented this Action AG 2-A by adopting Zoning Code amendments that set forth conditionally permitted uses (i.e., uses permitted subject to issuance of a Minor Use Permit or Use Permit) within agricultural zoning classifications, including the zones that apply to the Project site (F-A) and gen-tie (F-A

Table 4.11-1. Consistency Analysis with Colusa County General Plan for Land Use

Goals and Policies	Consistency Determination	Project Consistency
support agricultural uses, such as those directly necessary for processing, packaging, distribution, and on-site energy production, and those facilities that are industrial or commercial in nature and do not directly support agricultural activities and are not appropriate for development, without a Conditional Use Permit, in an agricultural zoning classification. The revisions shall identify performance standards that agricultural support facilities permit requests shall comply with, including [*list of standards*].		and E-A). Energy generation for off-site use is permitted with a Use Permit in both the F-A and E-A agricultural zoning classifications.
Objective AG 2-B: Allow Limited Recreation and Resource Production Uses on Agricultural Lands While Ensuring that Such Uses Do Not Adversely Affect Agricultural Activities.	Consistent	The proposed Project would develop an 80 MW Solar Facility and BESS on agricultural land. As discussed in Section 4.02, *Agriculture and Forestry Resources*, the Project site is not classified as Prime Farmland or Farmland of Statewide Importance. Due to the lack of irrigation connection, minimal average annual rainfall, and uncertainty of the potential for annexation into the Westside Water District, the site is not suitable for crops. Currently, the site is used for grazing (as it has been historically), which would continue on other portions of the property. At the end of the Project's life, the Project site would be decommissioned and the land returned to its current state. The proposed Project would also allow for economic growth opportunities through the construction and operation of a solar facility.
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.	Consistent	See 2 Agriculture, Goal AG-2, Objective AG 2-B of the Colusa County General Plan, above. The Project is proposed as a solar and battery storage facility, which is further enumerated in Policy AG 2-5 as an agricultural related industry the County seeks to encourage and support.
Action AG 2-D: Revise the Zoning Ordinance to define alternative energy and to develop performance standards for energy-generating and resource extraction uses on agricultural lands. These performance standards shall address environmental impact mitigation and compatibility with surrounding land uses, including but not limited to: a. Hours of operation b. Maximum noise levels c. Maximum daily trips d. Setbacks e. Lighting f. Water and sewer demand g. Flood management h. Landscaping	Consistent	The General Plan policies authorize alternative energy production on agricultural lands and the actions direct the County to adopt further refinements to the Zoning Code to facilitate these projects. The Zoning Code allows for energy generation for off-site use with a Use Permit within the F-A and E-A zones, which are the zones that apply to the Project site (F-A) and gen-tie line (F-A and E-A). The County processes Use Permit applications in accordance with section 44-1.080.030 of the Zoning Code ("Use Permits"), which requires certain findings and conditions of approval. Pending the adoption of performance standards specific to energy-generating uses, standard provisions of the General Plan and Zoning Code continue to apply, in addition to any project-specific conditions the County may apply either pursuant to CEQA or its police power authority to regulate land use.

Table 4.11-1. Consistency Analysis with Colusa County General Plan for Land Use

Goals and Policies	Consistency Determination	Project Consistency
i. Drainage infrastructure j. Roadway and access improvements k. Fire protection		
Chapter 8. Land Use Element		
Goal LU-2: Maintain Agriculture as the Paramount Land Use in the County and Ensure Land Use and Planning Decisions Support a Strong Agricultural Economy		
Objective LU-2A: Only Permit Development on Agricultural Land that will Not Interfere with Viable Agricultural Operations.	Consistent	As discussed in Section 4.02, *Agriculture and Forestry Resources*, the Project site is not Prime Farmland or Farmland of Statewide Importance, and does not have an irrigation connection. The Project site is also subject to a Williamson Act contract. Due to the lack of irrigation connection and poor soil quality, the site is currently used for grazing, as it has been historically. Following construction of the Project, the landowner would continue the existing grazing operation on other portions of the property, and, at the end of the Project's life, the Project site would be decommissioned and returned to its current state. With the implementation of the Project, the landowner could continue to use the property for cattle grazing without reducing the herd numbers. The Applicant has applied for a Use Permit and would adhere to the conditions of approval if the permit is approved. Therefore, the Project would not interfere with viable agricultural operations, and the agricultural capability of the Project site would remain unchanged.
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: • Use permit. • 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.	Consistent	Policy LU 2-11 allows for development of large-scale commercial solar energy production on non-prime agricultural land with a Use Permit. The Project site is not Prime Farmland or Farmland of Statewide Importance; therefore, its development subject to a Use Permit is consistent with this Policy. The Energy Production (EP) Overlay Zone is an alternative planning tool that the County may apply to certain parcels to promote alternative energy production through a streamlined permitting approach. As of the date of publication, the County has not yet adopted any EP Overlay Zones and the designation therefore does not apply to the Project site.
Chapter 5. Conservation Element		
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*	Consistent	The proposed Project is a solar PV power generation and BESS facility, which would generate and store up to 80 MW of electricity at the point of interconnection. As such, the Project represents an additional source of renewable energy for California's electrical grid.

Table 4.11-1. Consistency Analysis with Colusa County General Plan for Land Use

Goals and Policies	Consistency Determination	Project Consistency
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.	Consistent	See 5 Conservation, Goal CON-2, Objective CON 2-A of the Colusa County General Plan, above. This policy was included in the General Plan as a mitigation measure to address air quality impacts from new development. The proposed Project is a large-scale commercial solar PV power generation project.
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.	Consistent	This policy was included in the General Plan as a mitigation measure to address air quality impacts from new development. The Project site is designated Agriculture Upland, and the gen-tie line from the Project site intersects land designated as Agriculture Upland and Agriculture General. Policy CON 2-3 allows commercial alternative energy facilities (including solar) within the Agriculture Upland and Agriculture General land use designations with a Use Permit, which the Applicant has applied for and would obtain prior to construction.
Action CON 2-A: Amend the Zoning Ordinance to streamline permitting and provide clear development standards for the production of biofuels, biomass, solar, wind and other energy alternatives to reduce dependency on fossil fuels.	Consistent	The Colusa County Zoning Code permits energy generation for off-site use with a Use Permit in F-A and E-A zoning districts, which are the designations that apply to the Project site (F-A) and gen-tie line (F-A, E-A) (Colusa County Zoning Code § 44-2.20.30).

4.11.5 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

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 significant impact on the 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. Available online at: https://www.countyofcolusa.org/137/General-Plan. Accessed June 2024.

Colusa County. 2014. Zoning Code. Adopted August 26, 2014. Available online at: https://www.countyofcolusa.org/612/Zoning-Code. Accessed June 2024.

Colusa County. 2022. Colusa County Crop Report 2022. Available online at: https://www.countyofcolusaca.gov/DocumentCenter/View/16704. Accessed August 2024.

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

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 the feasibility of developing these aggregate resources is predicated on the existence of high local demand from the construction industry. The closest gravel mine, Lovelady Ranch, is approximately 20 miles northwest of the Project site and has been closed for a number of years.

There are no active mining claims within the Project site, nor is there any locatable mineral activity within the Project boundary (USGS 2021). Based on the geological environment and historical trends, the potential for occurrence of locatable minerals within the surrounding area is low. None of the resources listed in the Mineral Resources Data System occurs within 30 miles of the Project site, and such resources 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

According to California Geological Survey maps, the Project site is not located within a Mineral Resource Zone as defined by the Surface Mining and Reclamation Act of 1975 (SMARA; see below) (CGS 2022).

4.12.2 Regulatory Setting

4.12.2.1 Federal

No federal laws or regulations related to Mineral Resources apply to the Project.

4.12.2.2 State

Surface Mining and Reclamation Act of 1975

The Surface Mining and Reclamation Act of 1975 Pub. Res. Code §§ 2710 et seq.) mandates the development of mineral land classifications to help identify and protect mineral resources in areas within California subject to urban expansion or other irreversible land uses which would preclude mineral extraction. Following the classification of mineral resource areas, SMARA provides for the designation of lands containing mineral deposits of regional or statewide significance. SMARA also provides 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. As noted above, the Project site is not located within a Mineral Resource Zone as defined by SMARA (CGS 2022).

4.12.2.3 Local

Colusa County General Plan

The Colusa County General Plan ("General Plan") 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 Conservation Element of the General Plan 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, while minimizing the impact of these activities on surrounding land uses and the environment. Relevant policies include:

Objective CON-2C: *Protect Mineral and Natural Gas Resources and Avoid Land Use Conflicts from Mining and Resource Extraction Activities*

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 either of the 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 Zone (CGS 2022). The implementation of the Project would not result in a loss of a locally important mineral resource.

4.12.5 PG&E Cortina Substation Improvement

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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

These improvements would not result in the loss of 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 significant impact on 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 References

California Department of Conservation (DOC). 2000. California Surface Mining and Reclamation Policies and Procedures, Guidelines for Classification and Designation of Mineral Lands. https://www.conservation.ca.gov/smgb/Guidelines/Documents/ClassDesig.pdf. Accessed June 2024.

California Geological Survey (CGS). 2022. CGS Information Warehouse. Mineral Land Classification Map. https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc. Accessed June 2024.

Colusa County. 2012. Colusa County General Plan. Adopted July 31, 2012. Available online at: https://www.countyofcolusa.org/137/General-Plan. Accessed June 2024.

U.S. Geological Survey (USGS). 2021. Mineral Resources Data System. https://mrdata.usgs.gov/mrds/. Accessed June 2024.

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 comments regarding Noise during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA.

4.13.1 Existing Conditions

The Project site is on two parcels of private land that total approximately 886 acres and is currently operated as a cattle ranch. Only an estimated 666 acres of the approximately 886-acre site would be used for the Project. The Project site is surrounded by sporadic 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 adjacent to the western Project boundary 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 (LP) 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.
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.

Term	Definition
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 several residences near the Project site (NSA-1 through NSA-5). NSA-4 and NSA-5 are the residences of the landowner participating in the Project, such that NSA-4 and NSA-5 are not considered sensitive receptors.

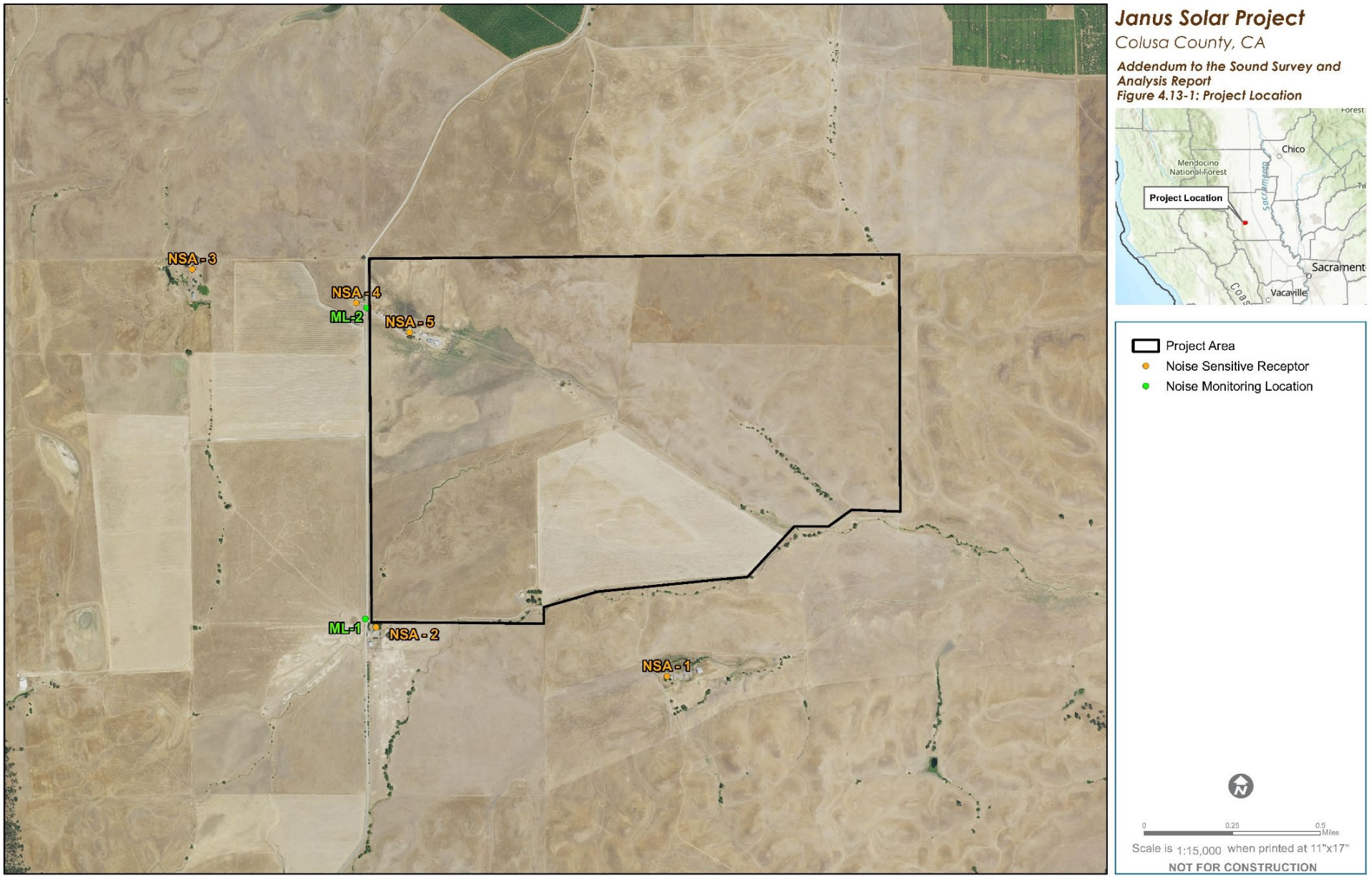

Figure 4.13-1 Sensitive Receptors

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-1. 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-1.

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 occasional buzz from a transmission line.

Location ML-2 was located on Spring Valley Road approximately 1.3 miles south of Walnut Drive, and 50 feet from the western Project boundary line. This location represents the closest residence to the west. 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

4.13.1 Regulatory Setting

4.13.1.1 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).

4.13.1.2 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.

4.13.1.3 Local

Colusa County General Plan

The Colusa County General Plan ("General Plan") 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). General Plan policies related to noise that are relevant to the proposed Project include:

Goal N-1: *Protect people from the harmful and annoying effects of exposure to excessive noise.*

Object N 1-A: *Ensure that Existing and Planned Land Uses are Compatible with the Current and Projected Noise Environment.*

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.

Objective N 1-C: *Encourage the Application of State of the Art Land Use Planning Methodologies in Areas of Potential Noise and Vibration Conflicts.*

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	Generators
Blowers	Grinders
Boilers	Heavy Equipment
Cooling Towers/Evaporative Condensers	Lift Stations
Conveyor Systems	Outdoor Speakers
Cutting Equipment	Pile Drivers
Drill Rigs	Pump Stations
Emergency Generators	Rice Dryers
HVAC Systems	Steam Turbines
Fans	Steam Valves
Gas or Diesel Motors	Transformers
Gas Wells	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

Colusa County Zoning Code

Chapter 13-6 of the Colusa County Zoning Code sets noise limits applicable to Project operations and are shown in Table 4.13-6.

Table 4.136. Colusa County Zoning Code Noise Limits

Land Use	Time Period	L_{eq} (dBA)
Residential	(9 p.m. to 7 a.m.)	50
	(7 a.m. to 9 p.m..)	55
Agricultural/Commercial/Industrial	(9 p.m. to 7 a.m.)	55
	(7 a.m. to 10 p.m..)	60

Chapter 13-8 of the Colusa County Zoning Code sets noise restrictions applicable to Project construction:

b) Construction and Landscape Maintenance Equipment. Notwithstanding any other provision of this chapter, between the hours of seven a.m. and seven p.m. on Mondays through Fridays, and between the hours of eight a.m. and eight p.m. on Saturdays and Sundays, construction, alteration, repair, or maintenance activities which are authorized by valid county permit or business license, carried out by employees or contractors of the county, or private activities not requiring a permit shall be allowed if they meet at least one of the following noise limitations:

1. No individual piece of equipment produces a noise level exceeding eighty-three dBA at a distance of twenty-five feet. If the device is housed within a structure on the property, the measurement shall be made outside the structure at a distance as close to twenty feet from the equipment as possible.

2. The noise level at any point outside of the property plane of the project does not exceed eighty-six dBA.

    A. The provisions of subsections (b)(1) and (2) of this section shall not be applicable to impact tools and equipment; provided, that such impact tools and equipment shall have intake and exhaust mufflers recommended by manufacturers thereof and approved by the director of public works as best accomplishing maximum noise attenuation, and that pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof and approved by the director of public works as best accomplishing maximum noise attenuation. In the absence of manufacturer's recommendations, the director of public works may prescribe such means of accomplishing maximum noise attenuation as he/she may determine to be in the public interest. Construction projects located more than two hundred feet from existing homes may request a special use permit to begin work at six a.m. on weekdays from June 15th until September 1st. No percussion type tools (such as ramsets or jackhammers) can be used before seven a.m. The permit shall be revoked if any noise complaint is received by the sheriff's department.

    B. No individual powered blower shall produce a noise level exceeding seventy dBA measured at a distance of fifty feet.

    C. On single-family residential property, the seventy dBA at fifty feet restriction shall not apply if operated for less than ten minutes per occurrence.

The E-A noise performance standard, per Section 44-2.20.20(b)(1) Maximum Noise Levels, applies to new sensitive land uses or residential projects and as such is not applicable to the Project as it is not a sensitive or residential land use.

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)**

As discussed in Section 4.13.1, Existing Conditions, monitoring locations and baseline sound level measurements were performed on March 17, 2020, and are presented in the Sound Survey and Analysis Report provided as Appendix I-1. At that time, the site analyzed encompassed three parcels, totaling approximately 1,024 acres. The footprint of the proposed Project site encompasses only two of the three parcels previously analyzed, totaling approximately 886 acres. The construction and vibration noise calculations and operational noise model have been updated to reflect the footprint of the proposed Project and are presented in Appendix I-2, Addendum to the Sound Survey and Analysis Report.

Construction and Decommissioning

Construction is anticipated to occur during a period of approximately 11 months, starting in approximately July 2025. 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 the installation of cables and utilities. The fourth stage includes the construction of the inverters, PV modules, and BESS, and also includes commissioning and testing.

Table 4.13-7 summarizes the projected noise levels at the NSAs, shown on Figure 4.13-2, due to Project construction.

Table 4.13-7. 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 (1,375 feet)1	NSA-2 (100 feet)1	NSA-3 (2,625 feet)1	NSA-4 (200 feet)1	NSA-5 (50 feet)1
Preparation	Backhoes	4	40	80	93	64	87	59	81	93
	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						
Excavation	Backhoes	4	40	80	93	64	87	56	81	93
	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	59	81	93
	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	63	86	98
	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						
	Generator Sets	4	50	82						

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 (1,375 feet)1	NSA-2 (100 feet)1	NSA-3 (2,625 feet)1	NSA-4 (200 feet)1	NSA-5 (50 feet)1
	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	49	72	51	66	78

[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 non-participating receptor NSA-2, and participating receptors NSA-4 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 related semi-truck construction traffic and off-site construction shall be limited to Mondays through Friday 7:00 am to 7:00 pm. On-site construction activities shall be limited to Mondays through Friday 7:00 am to 7:00 pm and from 8:00 am though 5:00 pm on Saturday and Sundays. 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 mitigation measure **NOISE-1**, the temporary increase in noise due to construction and decommissioning is considered to be a less than significant impact.

Operation

Noise Prediction Model

As presented in the Addendum to the Sound Survey and Analysis Report provided as Appendix I-2, 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 BESS 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 4.13-8 summarizes the equipment sound power level data used as inputs to the initial modeling analysis.

Table 4.13-8. 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.

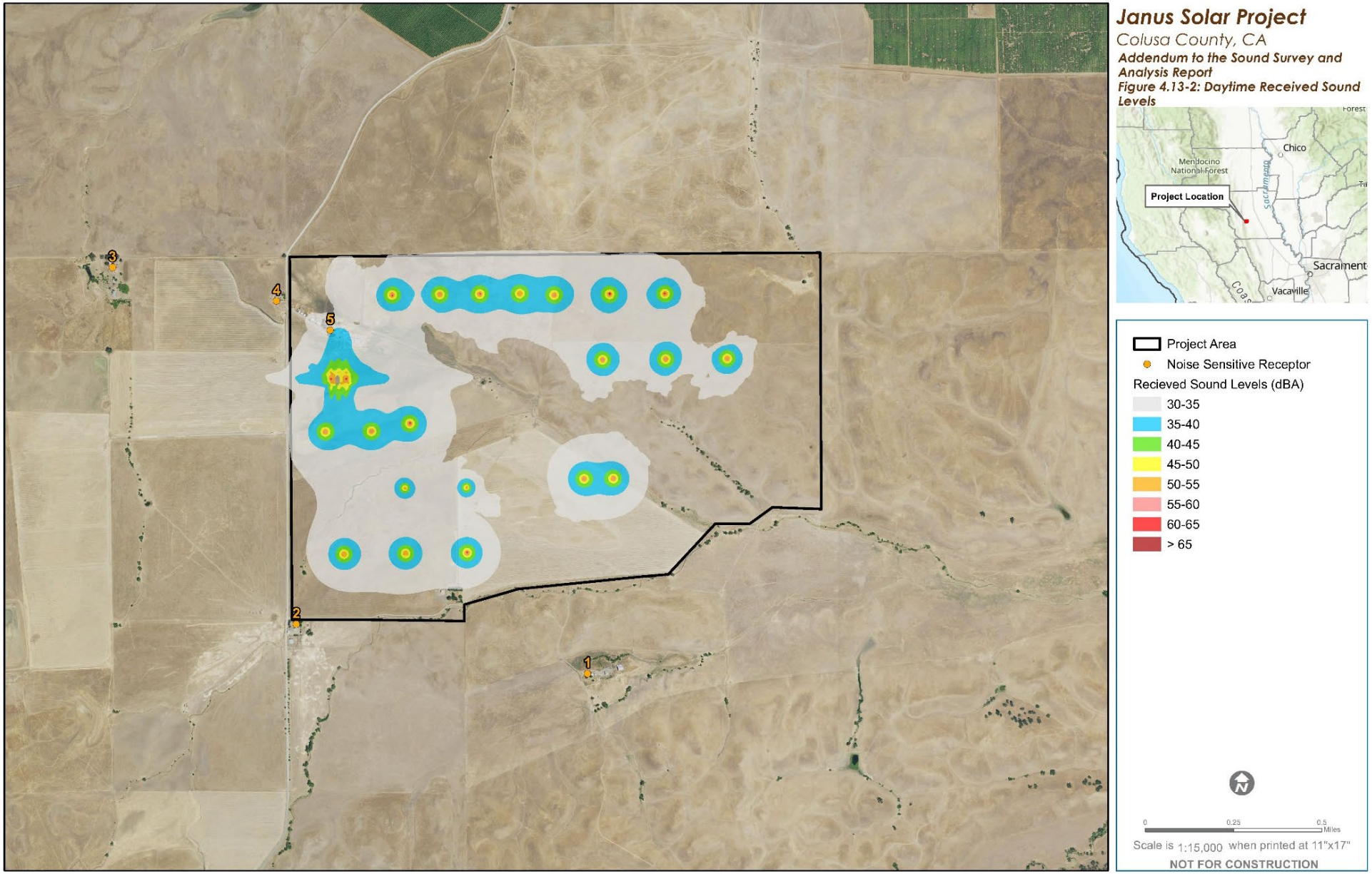

Figure 4.13-2. Daytime Received Sound Levels

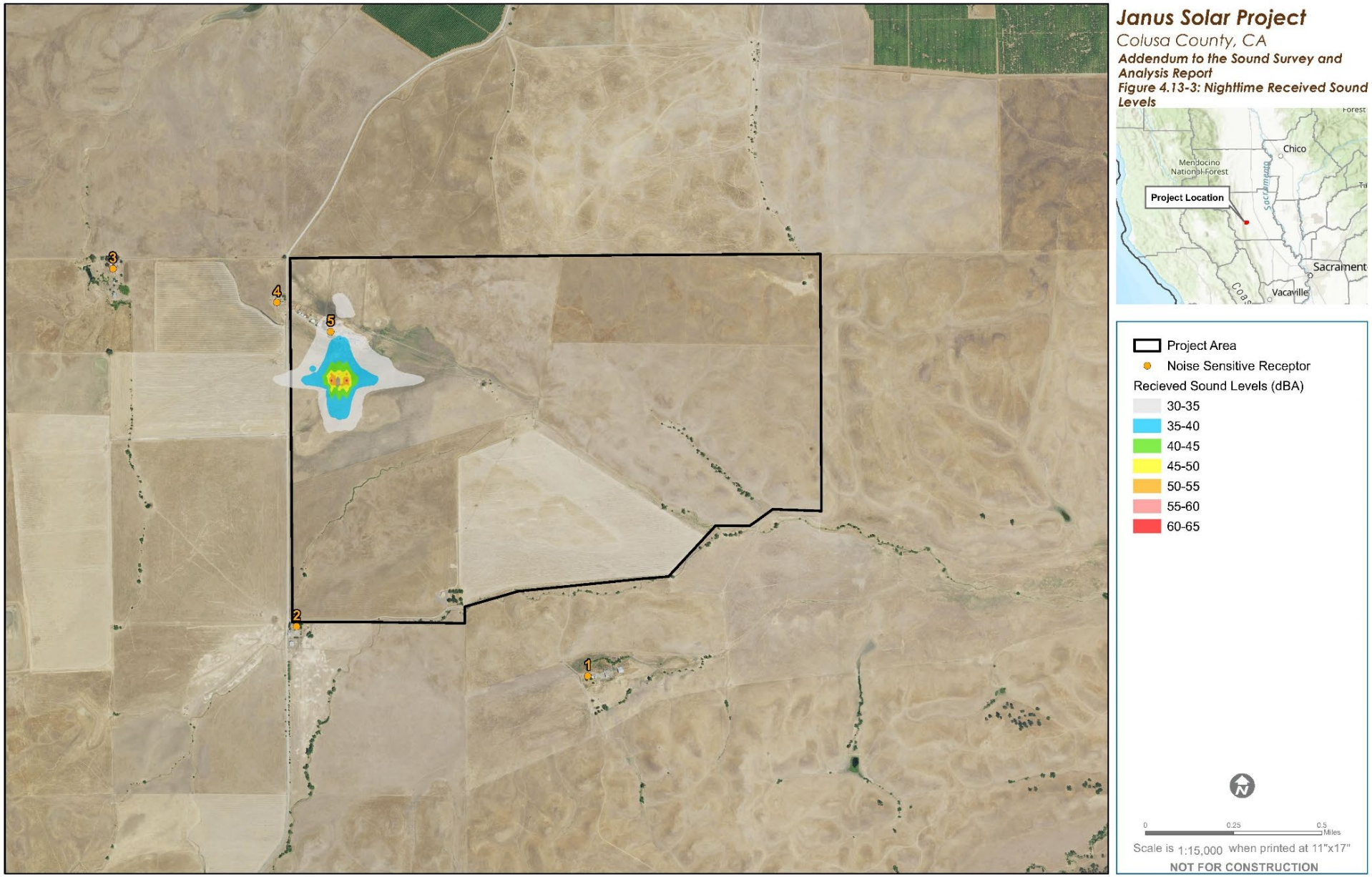

Figure 4.13-3. Nighttime Received Sound Levels

Table 4.13-9 and Table 4.13-10 show the projected exterior sound levels at the property boundary of each receptor, while Table 4.13-11 and Table 4.13-12 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 4.13-9. 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	22	33
NSA-2	Non-participant	562516	4326624	32	28	34
NSA-3	Non-participant	561506	4327674	34	22	34
NSA-4[1]	Participant	562084	4328070	34	31	36
NSA-5[2]	Participant	--	--	--	--	--
Noise Element Exterior Daytime Noise Level Limit						55 dB
Colusa County Zoning Code Daytime Noise Level Limit						55 dB

[1] NSA-4 is owned by the Project site landowner and located across Spring Valley Road from the Project.
[2] NSA-5 is owned by the Project site landowner and located within the Project Boundary.

Table 4.13-10. 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	4	24
NSA-2	Non-participant	562516	4326624	24	15	25
NSA-3	Non-participant	561506	4327674	28	12	28
NSA-4[1]	Participant	562084	4328070	28	22	29
NSA-5[2]	Participant	--	--	--	--	--
Noise Element Exterior Nighttime Noise Level Limit						45 dB
Colusa County Zoning Code Nighttime Noise Level Limit						50 dB

[1] NSA-4 is owned by the Project site landowner and located across Spring Valley Road from the Project.
[2] NSA-5 is owned by the Project site landowner and located within the Project Boundary.

Table 4.13-11. 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	16	32	0
NSA-2	Non-participant	562162	4326600	32	24	33	1
NSA-3	Non-participant	561324	4328230	34	19	34	0
NSA-4[1]	Participant	562072	4328230	34	31	36	2
NSA-5[2]	Participant	562316	4327942	34	39	40	6
Noise Element CEQA Threshold							3 dB

[1] NSA-4 is owned by the Project site landowner and located across Spring Valley Road from the Project.
[2] NSA-5 is owned by the Project site landowner and located within the Project Boundary.

Table 4.13-12. 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	<1	24	0
NSA-2	Non-participant	562162	4326600	24	13	24	0

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-3	Non-participant	561324	4328230	28	8	28	0
NSA-4[1]	Participant	562072	4328230	28	21	29	1
NSA-5[2]	Participant	562316	4327942	28	34	35	8
Noise Element CEQA Threshold							3 dB

[1] NSA-4 is owned by the Project site landowner and located across Spring Valley Road from the Project.
[2] NSA-5 is owned by the Project site landowner and located within the Project Boundary.

As NSA-4 and NSA-5 are participating receptors, Table 4.13-9 shows the highest daytime property noise levels will be 34 dBA at NSA-2 and NSA-3, and Table 4.13-10 shows the highest nighttime property noise level will be 28 dBA at NSA-3. These levels comply with the Colusa County Noise Element daytime threshold limit of 50 dBA, as well as the nighttime threshold of 45 dBA These levels also comply with the Colusa County Zoning Code daytime threshold limit of 55 dBA and nighttime threshold limit of 50 dBA for residential zoned land as well as the daytime threshold of 60 dBA and nighttime threshold of 55 dBA for agricultural zoned land. Table 4.13-11 and Table 4.13-12 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 daytime and 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.

To enable interconnection, the Applicant would construct a new, approximately 4-mile-long 60 kV gen-tie line, partially located within existing County ROW along Walnut Drive and Spring Valley Road, that would extend from the Project site to the PG&E 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 4.13-13.

Table 4.13-13. 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 4.13-13, 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. Therefore, 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 0.0002 PPV inches per second (in/sec; 45 VdB) to 0.0263 PPV in/sec (76 VdB) at the non-participating NSAs, and 0.0093 PPV in/sec (62 VdB) and 0.0743 PPV in/sec (64 VdB) at the participating 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 4.13-14 summarizes the predicted vibration levels at each of the NSAs based on the highest vibration generating equipment. As shown in Table 4.13-14, vibration levels may be perceptible at the nearest non-participating 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 4.3-14. Projected Construction Vibration Levels

Construction Operation	Vibration Level Metric	Project Boundary (50 feet)	NSA-1 (1,375 feet)[1]	NSA-2 (100 feet) [1]	NSA-3 (2,625 feet) [1]	NSA-4 (200 feet) [1]	NSA-5 (50 feet)[1]
Roller	PPV in/sec	0.0743	0.0005	0.0263	0.0002	0.0093	0.0743
	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 potentially significant impacts to noise resources.

NOISE-1: The Project shall implement the following construction management protocols to minimize noise impacts during construction:

- Use temporary noise walls that provide 10 to 15 dB of reduction so that construction noise does not exceed 86 dBA at the Project boundary;
- 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;
- Schedule construction activity during normal working hours on weekdays when higher sound levels are typically present and are found acceptable. Some limited on-site activities may be allowed provided that the standards of Table 1 of Chapter 13-6 of the County Code at the property line are not exceeded;
- 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 provided that the standards of Table 1 of Chapter 13-6 of the County Code at the property line are not exceeded; and
- Prior to construction, a single point of contact shall be identified and their contact information shall be provided to the County and adjacent property owners who shall receive all construction related complaints, including but not limited to noise, dust, and traffic. A single point of contact shall be assigned at all times during and after construction and shall be responsible for investigating and responding to all complaints.

4.13.6 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a

maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

Construction activities associated with these improvements have the potential to generate noise. Operation of these 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. Therefore, the PG&E Cortina Substation improvements would have no significant impact, with the implementation of mitigation, on criteria described for Impacts 4.13-1 through 4.13-3. 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.

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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.

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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 Williams. The mean commute time in Colusa County is 24.6 minutes (U.S. Census 2024). 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 and 2023. In 2023, Colusa County had an estimated population of 22,037, representing an approximate 0.9 percent increase from the 2020 population of 21,839 (U.S. Census 2024). The City of Williams had a higher rate of growth during the 2020 to 2023 period, but its actual growth was only 79 persons. The City of Colusa had an estimated population of 6,527 in 2023, an approximate 2.0 percent increase from 2010 (U.S. Census 2024).

Table 4.14-1. Historic Population Growth, 2000–2023

Area	2000	2010	2020	2023
Colusa County	18,804	21,419	21,839	22,037
Glenn County	26,453	28,122	28,917	28,129
Butte County	203,171	220,000	211,632	207,172
Yolo County	168,660	200,849	216,403	220,544
Lake County	58,325	64,665	68,168	67,878
Sutter County	78,930	94,737	99,633	97,948

Source: U.S. Census 2024

4.14.1.2 Housing

Table 4.14-2 outlines housing data for Colusa County and the surrounding counties in 2024. Vacancy rates for these jurisdictions ranged from 4.5 percent (Yolo County) to 19.3 percent (Lake County). In 2024, Colusa County had an estimated 8,261 housing units with a vacancy rate of 10.7 percent (886 vacant housing units).

Table 4.14-2. 2024 Housing Data Estimates

Area	Total Housing Units	Occupied Housing Units	Vacancy Rate (percent)
Colusa County	8,261	7,375	10.7
Glenn County	11,201	10,468	6.5
Butte County	94,737	87,492	7.6

Area	Total Housing Units	Occupied Housing Units	Vacancy Rate (percent)
Yolo County	84,103	80,343	4.5
Lake County	34,514	27,846	19.3
Sutter County	34,960	33,506	4.2

Source: CDOF 2024.

The number of households in Colusa County is expected to increase by up to 7.0 percent over the period from 2020–2028 based on published data (Colusa County 2020).

4.14.1.2.1 Temporary Housing

Colusa County currently has over 13 full-service hotels and motels, including 8 motels in western Colusa County (Trip Advisor 2024; Visit Colusa County 2024). East Park Reservoir, Colusa-Sacramento River State Recreation Area, and the Mendocino National Forest provide 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 laws or regulations related to Population and Housing apply to the Project.

4.14.2.2 State

No state laws or regulations related to Population and Housing apply to the Project.

4.14.2.3 Local

Colusa County General Plan

The Housing Element of the Colusa County General Plan 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 (RHNA) allocation of 526 new housing units needed between 2019 and 2028 (Colusa County 2020). The Community Character Element also includes goals and policies related to maintaining the unique characteristics, including rural character, small-town feel, and quality of life, that distinguish the individual unincorporated communities within Colusa County (Colusa County 2012).

The following policies from the Housing Element Update and Community Character Element are relevant to the Project:

Goal CC-2: *Ensure that New Growth Addresses the Needs, Challenges and Opportunities Unique to Each Community*

Policy CC 2-68: Encourage commercial, industrial, and other job-generating land uses, particularly in locations that are readily accessible by I-5.

Goal HO-4: *Equal Access to Safe and Decent Housing for All Income Groups*

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)**

The Project is anticipated to employ approximately 200 on-site personnel during construction. The average number of workers on site is expected 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, could also take approximately 11 months.

As described in the Project Description 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 six-county regional area.

The California Employment Development Department estimated that the annual average unemployment rate in Colusa County in April 2024 was approximately 15.4 percent (not seasonally adjusted) compared to the statewide unemployment rate of 4.8 percent (CEDD 2024c). In 2019, the construction industry employed an average of 173 individuals in Colusa County. Four years later the number of individuals employed in the construction industry decreased to 141 individuals at the end of the fourth quarter of 2023 (CEDD 2024d). Employment in Colusa County rapidly declined during 2020 due to the COVID-19 pandemic. The annual employment average in Colusa County for 2020 was 8,880 persons employed, with an unemployment rate of 16.4 percent (CEDD 2024b). Projected job growth for the North Valley-Northern Mountains Region of California, which includes Colusa, Glenn, Lassen, Modoc, Nevada, Plumas, Sierra, Siskiyou, Tehama and Trinity counties, consists of an estimated 8.3 percent increase for the period of 2020 through 2030 (CEDD 2024a).

The Project is anticipated to generate a smaller number of highly specialized jobs during its operational phase. Once constructed, the Project would operate seven days per week, 365 days per year. Approximately three-to-five, permanent, on-site staff are anticipated. 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.

Colusa County is expected to increase housing by up to 526 units between 2019 and 2028 based on published data (Colusa County 2020). The RHNA numbers were optimistic when initially published in 2020, however, in recent projections, the new housing unit numbers would be significantly less. The Project is not anticipated to increase the need for additional housing units, as workers supporting the construction phase 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 development 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 also 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.

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 another residence located northwest of the Project, also more than 1,000 feet from the Project's northwest corner. The fourth residence is approximately 430 feet south of the proposed gen-tie line, along Walnut Road. The residence in the Project site's northwest corner, and across Spring Valley Road, are owned by the Project site landowner (see Figure 2-2).

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.

4.14.5 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

These improvements would not affect the population or housing occupancy of Colusa County. It is anticipated that a majority of the construction workforce for the PG&E Cortina Substation improvements would be hired from the existing workforce in the Colusa regional area. In addition, no changes to the operational workforce would occur due to these upgrades. Therefore, the PG&E Cortina Substation improvements would have no significant impact on criteria described for Impacts 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, the Project would not cause or contribute to any potential cumulative impacts to Population and Housing.

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 that can affect the maximum workforce required for a project, it is difficult to estimate employment levels (or their potential to overlap) with certainty. For example, the Project would require a maximum of approximately 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

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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 received comments regarding Public Services during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA.

4.15.1 Existing Conditions

The setting for Public Services includes the service areas of police protection, fire protection, schools, parks, library, and medical providers that serve the area in which the Project is located.

4.15.1.1 Fire Protection

The Williams Fire Protection Authority (WFPA) would provide fire services to the Project site. The station is located at 810 E Street in the city of Williams, approximately 12 miles from the Project site.

4.15.1.2 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, approximately 16 miles from the Project site.

4.15.1.3 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 2024). 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.

4.15.1.4 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, located 6.4 miles from the Project site. The Colusa National Wildlife Refuge is located approximately 13 miles northwest of the Project site. Parks and other recreational resources are discussed further in Section 4.16*, Recreation.*

4.15.1.5 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 laws or regulations related to Public Services apply to the Project.

4.15.2.2 State

No state laws or regulations related to Public Services apply to the Project.

4.15.2.3 Local

Colusa County General Plan

The Public Services and Facilities Element of the Colusa County General Plan contain the following objectives and policies related to fire protection, police protection, schools, parks, and other public services that apply to the Project (Colusa County 2012):

Goal PSF-3: Maintain adequate and efficient fire protection, emergency medical response, and law enforcement services for existing and new communities.

Objective PSF-3A: *Ensure Public Protection and Safety*

Policy PSF 3-3*:* Continue to coordinate fire protection services with the planning and development review process.

Objective PSF-3B*: Maintain Adequate and Efficient Law Enforcement Services*

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, 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, to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

i) Fire protection

Less than Significant Impact. The WFPA would provide fire services to the Project site. The station is located at 810 East Street in the city of Williams and is approximately 12 miles from the Project site. While the Project would be designed and constructed 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 construction of the Project would nonetheless introduce a greater fire risk than exists today. While the Project is not anticipated to contribute a large increase in population that would cause a substantial increase in the demand for fire protection, the high voltage nature of the project will cause an increased demand for fire protection.

Construction and Decommissioning

The Project could potentially introduce an ignition source from the use of construction vehicles and equipment. Construction and decommissioning activities such as welding and grinding could generate sparks and increase the likelihood of ignition, especially during warmer, dry months between June and October. However, construction and decommissioning would be short-term activities, and the Project would follow all applicable laws and regulations to reduce the likelihood of fire occurrence. The construction and decommissioning of the Project would not significantly impact acceptable service ratios, response time or other performance objectives for fire protection services. See Section 4.20, *Wildfire*, for additional detailed discussion regarding potential impacts and analysis related to fire.

Operation

The Project would include a BESS and other supporting electrical equipment elements that may be susceptible to fire. However, the BESS used on-site would be designed and operated 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 BESS 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. 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, and all such enclosures would be equipped with fire suppression systems. Intermittent maintenance activities could increase the potential for ignition on-site due to the presence of vehicles and use of equipment; however, these activities would be low in frequency and include inspections and replacement of any damaged components that could pose a risk of ignition. See Section 4.20*, Wildfire*, and Section 4.9,

Hazards and Hazardous Materials, for additional detailed discussion regarding potential impacts and analysis related to fire.

Although the overall fire risk is low, there is the potential for increased calls for fire service during the construction, and operations of the Project that is greater than what exists today. Consistent with General Plan Policy PSF 3-3, the County coordinated with the WFPA in the planning review process and determined that while development of the Project could result in an incremental increase in the potential for calls for service, this potential increase is expected to be limited given the design, engineering, and safety features incorporated into the Project. However, although the overall fire risk is low, there is the potential for increased calls for fire service during the construction and life of the project that is greater than what exists today. In addition, the complexity and dangers associated with electrical and battery storage fires create operational challenges to a small, rural fire department such as the Williams Fire Authority. In order to address the significant operational challenges and the potential impact that would be created, the developer has entered into an agreement with the WFPA to fund a full-time, 24-hours a day, 365 days a year permanent fire fighter to ensure full-time fire staff is available to respond to any fire that may occur. On this basis, the Project would not trigger the requirement of new or modified fire protection facilities in the WFPA service area. The Project is also not anticipated to contribute to a large increase in population that would cause a substantial increase in the demand for fire protection or new or modified fire protection facilities. The workforce required for operations and maintenance activities would be more limited than the workforce required for construction, with up to five permanent, on-site staff anticipated. Therefore, impacts to fire protection services would be less than significant due to the funding agreement with the WFPA.

ii) Police protection

Less than Significant Impact. The Project site would be serviced by the Colusa County Sheriff's Department. The County's Sheriff's office is located at 929 Bridge Street in the City of Colusa and is approximately 17 miles to the east of the Project site.

The Project layout has been designed to incorporate safety and crime prevention measures, consistent with Policy PSF 3-12. The Solar Facility and BESS would be secured with chain link fencing along the perimeter of the Project site. Access to the Project site 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. During operations and maintenance there would be up to five permanent, on-site staff anticipated. These workers could relocate to the area, but would not result in a substantial increase in population that would cause an adverse increase in the demand for police services or facilities.

While the Project includes design features that would help secure the site, the construction of the Project could potentially increase sheriff dispatches as part of emergency responses associated with the Project, but would be anticipated to be intermittent and limited in nature. Due to the property tax exclusion of the solar project, property tax dollars that would normally be collected to pay for the costs of County public services would be drastically reduced. However, the developer has included in the project definition the payment of a public services fee that would provide general funding for provision of public services in Colusa County.

Therefore, the Project would not substantially adversely impact police protection services and impacts would be less than significant due to the public services funding.

iii) Schools

No Impact. The nearest school is Williams Elementary School located at 1404 East Street in the city of Williams and is approximately 6 miles from the Project site. The Project is not anticipated to contribute to an increase in population or the associated potential increase in school-aged children, and therefore would not result in any increased demand for schools.

While the project could employ up to 200 workers during the 11-month construction period, it is anticipated that the majority of these workers would temporarily commute from nearby communities such as Williams or Colusa rather than relocating to the area. However, due to the Project size, it is anticipated that some would travel further distances in the Sacramento Valley area. Once constructed, permanent employment would include up to five employees. 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 schools.

iv) Parks

Less than Significant Impact. The nearest park is Northview Park located at 180 Virginia Street in the city of Williams and approximately 6.4 miles from the Project site. During construction, workers would commute to the Project site from surrounding communities. Construction workers are not anticipated to relocate closer to the Project site and increase the use of recreational facilities due to the temporary nature of the Project's construction; although park facilities could be used during breaks and off-work hours for those works that may be temporarily staying in the area. The workforce required for operations and maintenance activities would be more limited than the workforce required for construction, with up to five permanent, on-site staff anticipated. Permanent operations staff could relocate with their families to the surrounding area which could increase the use of recreational facilities in the region. Due to the property tax exclusion of the solar project, property tax dollars that would normally be collected to pay for the costs of park and recreation services and facilities would be drastically reduced. However, the developer has included in the project definition the payment of park and recreation services fee that would provide general funding to the three nearby park districts to address any increase in servicer demand. Thus, impacts to increased use of local and regional parks or recreational facilities that would lead to substantial physical deterioration would be limited and less than significant due to the funding agreement.

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, 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?

Less than Significant Impact. The Project is not anticipated to contribute to a significant increase in population growth. However, there will be an increase in employment of temporary and permanent workers and potentially their families. While it is not anticipated that a significant demand for public facilities such as libraries or parks would be created there could be an increase. Normally, any such increase would be addressed through the collection of property taxes which would off-set any such increase in public service costs. Due to the property tax exclusion of the solar project, property tax dollars that would normally be collected to pay for the costs of increase public services would be drastically reduced. However, the developer has included in the project definition the payment of a public service fee to the County of Colusa that would provide the funding that would pay for any such increase in public service costs. 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 with the payment of the public services fee to Colusa County, and impacts would be less than significant due to the public services funding.

4.15.5 PG&E Cortina Substation Improvement

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

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

The potential cumulative impacts related to Public Services would extend within the service areas for each of the fire, sheriff, and other governmental offices/facilities serving the Project site. As discussed above included in the project definition is the payment of fire and public services fees that would reduce the impacts to fire protection and other public services to less than a significant level. The geographic scope for potential cumulative impacts to public services, including fire protection, encompasses the Project site and surrounding areas. The existing area compromises primarily of agricultural land uses and sporadic rural residential with no concentrated populated areas nearby. The topography of the geographic scope is relatively flat with sparse vegetation due to the surrounding agriculture. The grassland, however, may be susceptible to wildland fire.

As described previously in Impact 4.15.1, operational activities that could potentially increase the potential of ignition on-site would be intermittent and not substantially increase the fire risk of past, present and future projects. As also discussed, the technical requirements to respond to any fire incident would be beyond the typical capacity of a small rural fire department and require permanent trained fire staff. Similarly, past, present, and future projects in the surrounding area would also be required to adhere to applicable federal, state, and local regulations, ensuring little to no cumulative impacts to public services with the incorporation of fire and public service fees. Therefore, the Project would have less than significant cumulative impacts to public services.

4.15.7 References

Colusa County. 2012. Colusa County General Plan. Adopted July 31, 2012. Available online at: https://www.countyofcolusa.org/137/General-Plan. Accessed June 2024.

Williams Unified School District (WUSD), 2024. Williams Unified School District Welcome Page. https://www.williamsusd.net/. Accessed June 2024.

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 comments related to Recreation during the scoping period.

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 the recreational resources are located within the northeastern portion of the County. Smaller, local recreational facilities in Colusa County, within 10 miles of the Project site, 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 northeast 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 to 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 2024a).

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 2024b).

4.16.1.2 Delevan National Wildlife Refuge

The Delevan National Wildlife Refuge is located approximately 15 miles northeast 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 2024c).

4.16.1.3 East Park Reservoir

East Park Reservoir is located approximately 16 miles northwest 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 2024).

4.16.1.4 Colusa-Sacramento River State Recreation Area

The Colusa-Sacramento River State Recreation Area is located 15 miles northeast 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 2024).

4.16.2 Regulatory Setting

4.16.2.1 Federal

No federal laws or regulations related to Recreation apply to the Project.

4.16.2.2 State

No state laws or regulations related to Recreation apply to the Project.

4.16.2.3 Local

Colusa County General Plan

The Colusa County General Plan ("General Plan") 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). General Plan policies related to Recreation that are relevant to the proposed Project include:

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

Objective OSR 1-A: *Provide a Diverse and Accessible Range of Open Space Lands*

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.

Objective OSR 1-B*: Balance Open Space Preservation with Economic Development Needs*

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.

Goal OSR-2: *Increase Opportunities for Recreational Activities in Open Space*

Objective OSR 2-B: *Increase Opportunities for County Residents and Visitors to Engage in a Broad Variety of Outdoor Recreation Activities*

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 impacts to recreation 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 are 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 increased use of parks and other regional facilities is not anticipated.

During construction, new construction jobs would be generated temporarily, and workers would commute to the Project site from surrounding communities. Construction workers are not anticipated to relocate closer to the Project site and increase the use of recreational facilities due to the temporary nature of the Project's construction. The workforce required for operations and maintenance activities would be more limited than the workforce required for construction, with three to five permanent, on-site staff anticipated. Permanent operations staff could relocate with their families to the surrounding area which could increase the use of recreational facilities in the region. Thus, impacts to increased use of local and regional parks or recreational facilities that would lead to substantial physical deterioration would be limited and less than significant.

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 photovoltaic (PV) electricity generating facility, including a BESS and associated facilities/infrastructure. 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.

4.16.5 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

These improvements would not lead to 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. 2024. Colusa-Sacramento River State Recreation Area. http://www.parks.ca.gov/?page_id=461. Accessed June 2024.

Colusa County. 2024. Colusa County East Park Reservoir. https://visitcolusacounty.com/reservations/. Accessed June 2024.

U.S. Fish and Wildlife Services (USFWS). 2024a. About Colusa National Wildlife Refuge. https://www.fws.gov/refuge/colusa/about-us. Accessed June 2024.

USFWS. 2024b. Waterfowl Hunting on Complex. https://www.fws.gov/refuge/sacramento/sacramento-nwr-complex-hunting. Accessed June 2024.

USFWS. 2024c. Delevan National Wildlife Refuge (California). https://www.fws.gov/refuge/delevan/. Accessed June 2024.

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 comments regarding Transportation during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA.

4.17.1 Existing Conditions

State Route (SR) 20 runs as close as 1 mile from the Project site to the north and west. Interstate 5 (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.

4.17.2 Environmental Setting

4.17.2.1 Major Highways

State Route 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 7,800 vehicles, with approximately 700 vehicles during the peak traffic hour (Caltrans 2023).

Interstate 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, traffic is light on the roads immediately adjacent to the Project. The available Caltrans data indicate an average of 29,000 vehicles per day on I-5 and 7,800 vehicles per day on SR 20 within Colusa County (Caltrans 2023). 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 500–800 vehicles per day, or less than 100 vehicles during peak hour (Tetra Tech 2021).

4.17.2.2 Local Roads

Spring Valley Road is a two-lane undivided county road that provides access from the site via Walnut Drive to SR 20. All 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 I-5, to Walnut Drive and then to Spring Valley Road. 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.

4.17.3 Regulatory Setting

4.17.3.1 Federal

No federal laws or regulations related to Transportation apply to the Project.

4.17.3.2 State

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 1–5 (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. Permits are required for any load that exceeds Caltrans weight, length, or width standards for public roadways.

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 vehicle-miles traveled (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)).

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, as it 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.

4.17.3.3 Local

Colusa County General Plan

The Colusa County General Plan ("General Plan") 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). General Plan policies related to Transportation that are relevant to the proposed Project include:

Goal CIRC-1: *Provide an Efficient Multi-modal Road and Highway System that Meets the Needs of All Users for the Movement of People and Goods.*

Objective CIRC 1-A: *Maintain Safe and Efficient Operating Conditions on All County Roadways.*

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 mitigate a project's transportation impacts to local roads, consistent with the policies of the General Plan, and 2) 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 1-12: Require new development and other projects with transportation impacts to pay their share of the costs of all feasible transportation improvements, including bicycle/pedestrian, transit, and safety, necessary to reduce the severity of cumulative transportation impacts.

Goal CIRC-3: *Provide a Circulation System that Supports Public Safety.*

Objective CIRC-3B: *Reduce Moving Traffic Hazards*

Policy CIRC 3-4: Install stop signs, railroad crossing guards, and warning signs, where appropriate and warranted.

Policy CIRC 3-6: Ensure adequate access for emergency vehicles.

Goal CIRC-4: *Improve Livability in the County through Land Use and Transportation Decisions that Provide Residents with Choices to the Mode that they Use to Make Trips in the County.*

Objective CIRC-4A: *Provide Circulation Improvements that Address Livability, Accommodate Industrial and Commercial Development, and Consider Regional Planning Efforts, State Law, and Current Priorities.*

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.

4.17.4 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.*

4.17.5 Impact Analysis

A 2021 Traffic Analysis Technical Memorandum (Appendix J-1) and 2024 Addendum to the Traffic Analysis Technical Memorandum (Appendix J-2) were prepared for the proposed Project and include Level of Service (LOS) and Vehicle Miles Traveled (VMT) assessments. The following discussion includes summaries and provides specific discussions of results and conclusions.

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 accounts 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.

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.

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, 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 and 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.

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. The 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 with Mitigation Incorporated)**

The LOS analysis provided in Appendix J-1 relies on conservative estimates due to the lack of traffic count data for local roadways. 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 of the total daily trips. 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, such that 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 currently, plus 150 vehicles generated by Project construction, would be 230 and is conservatively estimated to be up to 310 vehicles. 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 of Appendix J-1 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.

Appendix J-2, *Addendum to the Traffic Analysis Technical Memorandum,* clarifies that the Applicant proposed a different route than previously analyzed in Appendix J-1 for construction traffic, directing from Interstate 5 (I-5) to Highway 20, to Walnut Drive then to Spring Valley Road to the Project site. Although the new route is proposed, the main intersection at Walnut Drive and Spring Valley Road remains the primary focus of the LOS analysis.

The Project has the potential to impact transportation resources. With the implementation of mitigation measure **TRANS-1**, a pre- and post-Project inspection would be conducted to determine if any damage was caused to the construction routes. If the inspections conclude that the Project resulted in damage to the construction routes, the roadways would be repaired by the Applicant. Therefore, impacts to roadways would be temporary and reduced to less than significant with mitigation.

Because the existing roadways would still be functioning under their estimated capacity, there would 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.

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 October and March.

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

Type	Worker Trip	Worker Trip	Worker Trip	Worker Trip	Equipment Trip	Materials Trip	Materials Trip
Percent of total	15%	10%	10%	65%	100%	60%	40%
Percent Carpool	25%	25%	25%	25%	N/A	N/A	N/A
July[1]	697.5	920	2110	20930	644	708	257.6
August	697.5	920	2110	20930	644	708	257.6
September	1395	1840	4220	41860	128.8	1416	515.2
October	2790	3680	8440	83720	128.8	1416	515.2
November	2790	3680	8440	83720	128.8	2124	772.8
December	2790	3680	8440	83720	128.8	2124	772.8
January	2790	3680	8440	83720	128.8	2124	772.8
February	2790	3680	8440	83720	128.8	2124	772.8
March	2790	3680	8440	83720	128.8	708	257.6
April	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 with Mitigation)**

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). Additionally, mitigation measure **TRANS-2**, requiring coordination with Caltrans and the County to locate the appropriate placement of construction warning signs, would be implemented. 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.

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

[1] The proposed Project schedule has been updated since **Appendix J-1:** *Traffic Analysis Technical Memorandum,* was written in 2021.

access roadway improvements would occur. Therefore, the Project would allow for adequate emergency access. The Project design includes perimeter and internal access roads compliant with the California Fire Code that would allow operations and maintenance personnel, as well as emergency services providers to access the Project site without obstructing traffic along Spring Valley Road, further avoiding impacts to emergency response, evacuation routes, and emergency access during construction and operation and maintenance. In the unforeseen event of an emergency at the BESS, emergency personnel would be directed on site, to maintain the flow of traffic along Spring Valley Road. In the unlikely event of a fire at the BESS, resulting in an evacuation order, emergency personnel would direct the flow of traffic to allow evacuation along Spring Valley Road. 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.

4.17.6 Mitigation Measures

TRANS-1: Road Inspection and Repairs

Prior to construction activities beginning and building permit issuance, the Applicant shall conduct a pre-Project inspection of the construction access routes approved by the Colusa County Public Works Director. This inspection shall document through photographs and/or video the conditions of said access routes, shall be conducted with County Public Works staff, and following the completion of the pre-Project inspection documentation shall be submitted to the Public Works Director.

Following completion of the construction activities, the Applicant shall conduct a post-Project inspection of the construction access routes approved by the Colusa County Public Works Director. This inspection shall document through photographs and/or video the conditions of said access routes, shall be conducted with County Public Works staff, and following the completion of the post-Project inspection documentation shall be submitted to the Public Works Director. Damage to streets to the extent determined to have been caused by Project construction traffic shall be repaired to the satisfaction of the Public Works Director.

The pre-Project and post-Project inspection requirements detailed herein shall also be performed just before and immediately after project decommissioning to address any road damage as a result of decommissioning construction traffic.

TRANS-2: Construction Warning Signs

Prior to construction activities commencing, the Applicant shall contact Caltrans and the Colusa County Public Works Department to determine any appropriate locations for construction warning signs along Highway 20 and along County Roads. The placement of such signage shall be subject to Caltrans and the Public Works Department's specifications. The results of these determinations shall be submitted to the Colusa County Community Development Director for review and approval prior to construction commencing.

4.17.7 PG&E Cortina Substation Improvement

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

These improvements would not put a significant strain on the existing roadways. Additionally, there would be no need to finance or physically make improvements to roadways as mitigation for the PG&E improvements. Therefore, the PG&E Cortina Substation improvements would have no significant impact on criteria described for Impacts 4.17-1 through 4.17-4. No additional mitigation measures would be required.

4.17.8 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. With the implementation of mitigation measure **TRANS-1**, a pre- and post-Project inspection would occur, and any damage resulting from the Project will be repaired by the Applicant. 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.

4.17.9 References

California Department of Transportation (Caltrans). 2023. 2022 Traffic Volumes on California Highways. Available online at: https://dot.ca.gov/programs/traffic-operations/census. Accessed June 2024.

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 June 2024.

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 comments regarding Tribal Cultural Resources during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA.

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, *Cultural Resources*). 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, Assembly Bill 52 (AB 52) notification consultation letters were sent to Native American tribes potentially associated with the site.

4.18.2 Regulatory Setting

4.18.2.1 Federal

No federal laws or regulations related to Tribal Cultural Resources apply to the Project.

4.18.2.2 State

California Public Resources Code

Sections 21080 and 21084

Per the Public Resources Code (PRC), a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment (PRC § 21084.2). As specified in the PRC Section 21080.31, amended by AB 52, a lead agency is required 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)); 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.

Section 21074

Section 21074 of the PRC 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. Based on 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 Code of Regulations

Title 14, Section 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.

4.18.2.3 Local

Colusa County General Plan

The Colusa County General Plan ("General Plan") 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). General Plan policies related to Tribal Cultural Resources that are relevant to the proposed Project include:

Goal CON-3: *Conserve and protect cultural and historical resources.*

Objective CON-3A: *Conserve Important Cultural Resources and the County's Heritage*

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 3-5: 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

4.18.3 Thresholds of Significance

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

a) 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 searches, NAHC SLF search, and Phase I field survey (see Section 4.5), and tribal notifications 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 June 21, 2024:

- Wayne Mitchum Jr., Tribal 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
- Stephanie L. Reyes, Tribal Historic Preservation Officer, Middletown Rancheria of Pomo Indians

A request for consultation was received from the Yocha Dehe Wintun Nation, dated August 30, 2024 outside of the 30-day formal consultation timeframe. Discussions with the Yocha Dehe Wintun Nation is ongoing. Mitigation measures to include worker cultural sensitivity training and tribal monitors to be present during Project construction have been included in anticipation of the ongoing consultation with the Yocha Dehe Wintun Nation (see Section 4.5 Cultural Resources).

The Project has the potential to impact tribal cultural resources; however, 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 cultural resources would be appropriately addressed, thereby reducing any significant impacts to less than significant. 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

PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property

boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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. 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. Therefore, the PG&E Cortina Substation improvements would have no significant impact on criteria described for Impacts 4.18-1. No additional mitigation would be required.

4.18.7 Cumulative Impacts

If construction ground disturbance depths extend to native soils (approximately 1.5–3 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**, **CUL-2**, and **CUL-3** would mitigate impacts to cultural resources to 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 4.18.2 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 comments relating to Utilities and Service Systems during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA.

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 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 2024). The facility is permitted for 180 tons per day and the daily average has been less than 70 tons per day. 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 39,223,000 cubic yards and is expected to reach its permitted capacity in 2066 (CalRecycle 2024).

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 2023).

4.19.2 Regulatory Setting

4.19.2.1 Federal

No federal laws or regulations pertaining to Utilities and Service Systems apply to the Project.

4.19.2.2 State

California Integrated Waste Management Act

The California Integrated Waste Management Act (Pub. Res. Code §§ 40050 et seq.), enacted in 1989 as AB 939, 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 must 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.

Sustainable Groundwater Management Act

In 2014, a three-bill legislative package, comprised of AB 1739, SB 1168, and SB 1319 (known as the Sustainable Groundwater Management Act), was signed into law by Governor Brown. The Act requires governments and water agencies of high and medium priority basins to manage overdrafting to bring groundwater basins to balanced levels of pumping and recharge. The Act empowers local agencies to form Groundwater Sustainability Agencies to manage basins and adopt Groundwater Sustainability Plans for crucial groundwater basins in California.

Environmental Health Standards for the Management of Hazardous Waste

Title 22, Division 4.5 of the California Code of Regulations (CCR) discusses a range of requirements with respect to the disposal and recycling of hazardous and universal wastes. Specific standards and requirements apply to the identification, collection, transportation, disposal, and recycling of hazardous wastes. Additional standards are included for the collection, transportation, disposal, and recycling of universal wastes (as identified in Section 66273.9 of Title 22, 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.

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.

California Public Utilities Commission

The California Public Utilities Commission regulates services and utilities and ensures 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 CEQA 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.

NPDES 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 (NPDES) 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 Stormwater Pollution Prevention Plan (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 and Water Quality*, for a more detailed discussion relative to water quality and SWPPP requirements.

4.19.2.3 Local

Colusa County General Plan

The Colusa County General Plan ("General Plan") 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). General Plan policies related to Utilities and Service Systems that are relevant to the proposed Project include:

Objective PSF-1A: Provide safe, reliable, and environmentally sound water services to existing County land uses and areas of planned growth.

Policy PSF 1-8: Require proof of an adequate (as defined by the Colusa County Environmental Health Division) potable water supply to serve the entire project prior to approval of any division of land or use permit.

Objective PSF-1B: Provide safe, reliable, and environmentally sound wastewater services to existing County land uses and areas of planned growth.

Policy PSF 1-22: For projects that will rely on on-site wastewater systems, applicants shall provide detailed plans demonstrating that the systems 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.

Objective PSF-2C: Provide adequate solid waste disposal services and increase recycling and re-use among residents, businesses, and public agencies.

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.

Objective SA 1-D: Take appropriate steps to reduce the risks to life, property, and public services associated with flooding.

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).

Colusa County Zoning Code

Section 44.2-20.20 of the Colusa County Zoning Code requires that uses in the agricultural zone comply with a performance standard that there is no net increase in offsite drainage flows, including peak flows during a storm event, and water quality measures shall be implemented to reduce stormwater pollutants.

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

The current water facilities on-site are one hand dug well and several man-made reservoirs 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 and the Applicant would pay for the water required according to the rate that is in place at the time of construction. This agreement would be included in a will-serve letter obtained by the Applicant as a Condition of Approval of the Project's CUP. While the exact location of the hydrant

is yet to be determined, it is anticipated that the Project would use the hydrant located at the corner of J St and 7th St in the City of Williams.

The Project would primarily require water during construction for dust control. Total water required during construction is estimated to be 40 acre-feet (AF; 13,000,000 gallons). During O&M, water would be used for incidental 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 best management practices 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 may 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 megawatts of electricity. Additionally, the BESS would include power conditioning systems, electrical wiring, switching, transformers, and connect to the 60.0 kV bus in the on-site substation.

Except for the potential use of temporary portable lighting, no electrical services are required during construction and decommissioning. Baseline electricity would be consumed by the Project during operation for the O&M building and Project support facilities and the minimal amount of electricity required would be primarily powered by on-site energy generation. Additionally, the O&M building on the proposed Project site would be subject to the Building Energy Efficiency Standards as required by the California Code of Regulations, Title 24, Part 6. As discussed in Section 4.6, *Energy*, through compliance with applicable laws and standards for energy efficiency and conservation, operation of the Project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources, and energy impacts would be less than significant.

Electric facilities and connections proposed as part of the Project could result in potential environmental impacts, which are discussed throughout this Draft EIR. The Project would not require or result in the construction or relocation of new or expanded electric facilities that would cause an adverse environmental effect beyond those included as part of the Project.

Natural Gas

As a solar and BESS 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 on-site substation. The telecommunication routes would use a combination of existing poles or the proposed gen-tie 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 on-site substation. Belowground 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 on-site 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.

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 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 approximately 40 AF of non-potable water over an 11-month period. Operations of the Project would require approximately 1 AF per year for panel washing and general maintenance. 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.

As described in the 2021 Water Supply Assessment (WSA), included as Appendix H-1, the existing water demand of the natural vegetation which would be removed was estimated to be 440 AF per year. However, because the proposed Project footprint is reduced approximately 13 percent compared to the original acreage analyzed in the WSA, the existing water demand of the

natural vegetation on the Project site is estimated to be approximately 383 AF per year, as described in the Addendum to the WSA (Appendix H-2).

Existing water consumption at the Project site would therefore be reduced by approximately 343 AF during construction, which is estimated to require 40 AF of non-potable water. During operation, 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 382 AF per year compared to existing water consumption.

Due to the low amount of water used during the construction and operation, it is anticipated that the Project would have sufficient water supplies during normal, dry, and multiple dry years.

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 during construction would be provided on site via portable toilet facilities, with sanitary disposal occurring at an off-site facility. During operation, the O&M building would be served by a portable toilet. Public wastewater treatment services would not be required for the proposed 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 it has inadequate capacity to serve the Project's demand in addition to the provider's existing commitments.

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 would 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 4.19.1.2, 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 39,223,000 cubic yards and is expected to reach its permitted capacity in 2066 (CalRecycle 2024). Additionally, it is assumed the Project would comply with the CalGreen Code, which is intended to assist the County in complying with the solid waste reduction goals of AB 939.

Solid waste generated 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 Project would be required to be properly managed and disposed of in a licensed, off-site landfill 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 daily, or as otherwise needed, and transported to a licensed off-site landfill or recycling facility for disposal. The proposed Project would be implemented in compliance with applicable federal, state, and local statutes and regulations related to solid waste.

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 construction, the Project would be required to comply with the CalGreen Code, which is intended to assist the County in complying with the solid waste reduction goals of AB 939. Project operation would generate a negligible amount of solid waste as well as an onsite 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 result.

4.19.5 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

These PG&E 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. Solid waste management would not 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, present, and reasonably foreseeable future projects.

The geographic scope of potential cumulative impacts to landfill capacity would include 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, with recycling whenever feasible. In the unlikely scenario that the cumulative impacts 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 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, so 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 for additional capacity. It is anticipated that the County would have at least 15 years of remaining capacity at the time of the Project decommissioning, in compliance with the Integrated Waste Management 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 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 meet the criteria included in SB 610 (i.e., any project subject to CEQA; an industrial project of more than 40 acres in size, regardless of size or type, or that 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, which would ensure that sufficient groundwater supplies would be available to meet their demands during construction.

4.19.7 References

CalRecycle. 2024. Solid Waste Information System Facility/Site Activity Details. https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/733?siteID=4075. Accessed June 2024.

Colusa County. 2012. General Plan. Adopted July 31, 2012. Available online at: https://www.countyofcolusa.org/137/General-Plan. Accessed June 2024.

Colusa County. 2024. Solid Waste. https://www.countyofcolusa.org/146/Solid-Waste. Accessed June 2024.

Pacific Gas and Electric (PG&E). 2023. 2023 Joint Annual Report to Shareholders, February 21, 2024. Available online: https://s1.q4cdn.com/880135780/files/doc_financials/2024/ar/2023-Annual-Report-Master-from-10-K-web-ready-032524.pdf. Accessed June 2024.

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 comments regarding Wildfire during the scoping period, and those comments have been addressed in the following analysis to the extent relevant under CEQA.

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 for the two parcels that comprise the Project site, Assessor Parcel Numbers 018-050-005-000 and 018-050-006-000.

4.20.1.1 Climate and Topography

The Project site is located in northern California within the Central Valley. The Central Valley is a broad, elongated, flat valley that dominates the interior of California ranging from Bakersfield in the south to Redding in the north. This region experiences hot, dry summers, mild winters, and annual rainfall averaging between roughly 5–25 inches. Elevation at the Project site ranges between approximately 144–331 feet above mean sea level. Most 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 2024).

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 and the Cascade Range. The southern end is the Sacramento-San Joaquin Delta.

4.20.1.2 Vegetation/Fuels and Ignition Sources

Fuels for wildfire can include natural materials, such as dead leaves, twigs, branches, dead or live trees, brush, and dry grasses, as well as human-made structures. The greatest source of fuel would be the Project site's vegetative cover and thus, knowing how much fuel a particular vegetation type produces should provide an acceptable estimate of fuel load on the ground (Sikkink, et al, 2009). As described in Section 4.4, Biological Resources, the Project site currently supports dry land cattle grazing and one pasture, depending on the time of year, is used for both grazing and grain cultivation for purposes of feeding cattle. 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. Standing water, drainages, potential

wetlands, and riparian areas also occur within the Project site. A residence and several agricultural structures are also present on the Project site. Existing potential ignition sources could be natural or human-caused in connection with vehicles, agricultural equipment, powerlines, and residences.

The National Wildfire Coordinating Group (NWCG) has developed a variety of fuel models that describe different types of fuel and how fire spreads through them. Based on the vegetation present on the Project site, the most appropriate model to analyze the impact of a wildfire would be the Grass fuel model (GR) as the primary carrier in the model is grass. Grass fuels can vary from heavily grazed grass stubble or sparse natural grass to dense grass more than 6-feet tall. Fire behavior varies from moderate spread rate and low flame length in the sparse grass to extreme spread rate and flame length in the tall grass models (NWCG, 2024a). Because the site is currently used for cattle grazing, the existing vegetation was estimated to be 12 inches (1 foot high. Fire behavior would be expected to have a moderate spread rate and low flame length (NWCG, 2024a).

Site-specific fire behavior modeling was conducted for the Project in the *Fire Hazard Analysis Technical Memorandum* (Appendix K, Dudek 2024) and included the existing vegetation types and their corresponding fuel models, as shown in Table 4.20-1, Vegetation Communities and Fuel Models.

Table 4.20-1. Vegetation Communities and Fuel Models

Vegetation Communities	Fuel Model	Description
Annual Grassland	Gr2 – customized	Low load, dry climate grass
Yellow Starthistle Grassland	Gr2 – customized	Low load, dry climate grass, Fuel bed depth: ~ 2 feet, 1-h Fuel Load: 0.2 tons/ac
Wheat Fields	Gr2 – customized	Low load, dry climate grass, Fuel bed depth: ~ 2 feet,
Riparian Grassland	Gr1	Very low load, dry climate grass/forb
Riparian Wash	Nb1	Unvegetated Wash
Developed	Nb1	Developed

Vegetation types and corresponding fire behavior fuel models were classified for existing conditions. Fuel models for grasslands were assigned on the basis that current cattle grazing practices would not continue during the Project's construction and operation phases. In addition, vegetation conditions within designated Crotch's bumble bee habitat areas were assigned fuel models based on the assumption that no vegetation management would occur in these areas. Wheat fields were assigned fuel models to reflect pre-harvest conditions when grasses are fully cured, and herbaceous fuels are highly receptive to ignition and spread.

Maximum wind speed observations from historic weather data were utilized to determine extreme wind speeds expected at the Project site. Although Diablo winds have been documented to result in wind speeds as high as 40 miles per hour (mph), these extreme wind speeds are more common in areas west of the Project site within and to the west of the coastal range. Regardless, fire behavior in the grass fuels present within and adjacent to the Project site reaches maximum severity at wind speeds of roughly 20 mph. Therefore, the maximum 22 mph wind speed utilized for this fire behavior modeling is considered the most extreme possible fire behavior.

Terrain also affects wildfire movement and spread. Steep terrain typically results in faster upslope fire spread due to the pre-heating of uphill vegetation (see Appendix K). The Project site is absent of hazardous topographic features and is therefore unlikely to experience terrain-exacerbated fire behavior.

Fire behavior outputs for the Project include flame lengths (feet), fireline intensities (Btu/feet/second), spotting distance (miles), and spread rates (feet/minute) for the existing conditions. Table 4.20-2, Fire Behavior Modeling Results – Existing Conditions, provides fire behavior outputs for each vegetation type present within the Project site and directly adjacent lands.

Table 4.20-2. Fire Behavior Modeling Results – Existing Conditions

Vegetation Type	Flame Length (feet)*	Fireline Intensity (BTU/feet/second)	Spread Rate (ft/min)	Spotting Distance (miles)
Annual Grassland	12	1,165	268	0.5 (0.7)**
Yellow Starthistle Grassland	15	2,053	449	0.6 (0.8)**
Wheat Fields	13	1,555	381	0.6 (0.8)**
Riparian Grassland	3	44	30	0.2 (0.3)**
Riparian Wash	0	0	0	0
Developed	0	0	0	0

Note* Flame length values were rounded to the nearest foot.

Note** Represents spotting distances when considering 40 mph winds.

The fire behavior modeling of the existing Project site determined that:

- A wildfire burning through the Project site's grasslands driven by 22 mph winds would result in flame lengths ranging from 12-15 feet depending on the vegetation type.
- A wildfire within the grasslands within and adjacent to the Project has the potential to spread at rapid rates, with rates of spread ranging from 268-449 feet/minute (3.0-5.1 mph).
- Spotting distances, or the maximum distance an airborne ember may travel, range from 0.5-0.6 mile under 22 mph winds.
- When considering pre-harvest conditions, wheat fields have the potential for wildfire ignition and spread similar to adjacent grasslands.

4.20.1.3 Fire History

Historically, the California fire season extends from June through October, 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 beginning 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 12 fires in Colusa County (CAL FIRE 2024a):

- 2017 Sand Fire
- 2020 Hill Fire

- 2018 Stony Fire
- 2018 Ranch and River Fires (Mendocino Complex)
- 2019 Spring Fire
- 2020 Nail Fire
- 2020 Sites Fire
- 2020 August Complex Fire
- 2022 River Fire
- 2023 Lodoga Fire
- 2024 Sites Fire

4.20.1.4 CAL FIRE-Designated Wildfire Hazard Zones

CAL FIRE has published Fire Hazard Severity Zone maps for both Local Responsibility Areas (LRAs) and State Responsibility Areas (SRAs). The SRAs, effective April 1, 2024, represent 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 High Fire Hazard Severity Zone, as designated by CAL FIRE (CAL FIRE 2024b).

4.20.1.5 CPUC-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 2024).

4.20.1.6 Fire Protection Services

The Williams Fire Protection Authority (WFPA) is the primary fire protection service in the vicinity of the Project site. The WFPA's service area is over 200 square miles, including 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. CAL FIRE is also responsible for protecting natural resources from fire within SRA lands throughout California. Two major themes are attendant to the CAL FIRE mission. One is the protection of the State's merchantable timber on all non-federal lands from improper logging activities and the other is the protection of the State's grass, brush, and tree covered watersheds in SRA from wildland fire (CAL FIRE 2024c). Accordingly, WFPA would provide fire protection services for the Project and CAL FIRE would be the primary responding authority for wildland fires in the Project vicinity, and specifically within the SRAs. For additional details regarding fire protection services, see Section 4.15, *Public Services*.

4.20.2 Regulatory Setting

4.20.2.1 Federal

North American Electric Reliability Corporation Standards

The North American Electric Reliability Corporation (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 2024). 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, as well as 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 Institute of Electrical and Electronics Engineers (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 integrity of the electrical system.

4.20.2.2 State

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. CAL FIRE is currently updating the 2019 Strategic Fire Plan to build on the 2019 goals and objectives and is scheduled to finalize the updated plan in 2024 (CAL FIRE 2024b).

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 (CBSC) 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 CBSC 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 specify when and where standards apply.

Similar to the IFC, the California Fire Code and the CBSC 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, Colusa County, and the WFPA to minimize risk of fire from the stationary BESS 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 (Chapter 7). The WFPA also adopted the California Fire Code through WFPA Ordinance No. 20-01.

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 Colusa County 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.

California Public Utilities Commission General Orders

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. However, the Project's gen-tie line would be required to comply with Section III of General Order 95, which contains requirements for all lines.

[1] Investor-owned utilities (IOUs) are private electricity and natural gas providers. The CPUC regulates IOUs.

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 to establish necessary and reasonable clearances as set forth in Table 1 of General Order 95. These requirements apply to all overhead electrical supply and communication facilities that are covered by this General Order.
- Rule 38, which establishes minimum vertical, horizontal, and radial clearances of wires from other wires (CPUC 2018).

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 2017).

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 2021). In compliance with Standard 1.E of this General Order, PG&E adopted a Fire Prevention Plan on September 30, 2017.

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

[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.

structure. Additionally, PG&E's Wildfire Safety Operations Center operates 24-hours a day during wildfire season (PG&E 2019a).

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.

Senate Bill 1028

Senate Bill 1028 (2016) requires each electrical corporation (in this case, PG&E) 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.

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.

[3] Reclosing devices, such as circuit breakers, are used to isolate circuit segments when abnormal system conditions are detected.

These wildfire mitigation plans are required to be reviewed by an independent evaluator.

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;
- 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 2019b).

4.20.2.3 Local

Colusa County General Plan

The Colusa County General Plan ("General Plan") 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). General Plan policies related to wildfire that are relevant to the proposed Project include:

Goal SA-1: Ensure the safety of County residents, businesses, and visitors from hazardous conditions, including natural catastrophes and human-caused emergencies.

Objective SA 1-G: Minimize risks to human life and property from fire in both developed and undeveloped areas of the County.

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.

Colusa County Community Wildfire Protection Plan

The Colusa County Community Wildfire Protection Plan (CWPP), adopted in 2021, was developed as a means of describing current fire and fuels conditions within various portions of Colusa County, identifying public and private assets at risk from wildfire, assessing currently in-place infrastructure that have been developed in order to protect these assets, and to design efforts that improve current conditions. The CWPP also provides background information

necessary for local organizations to obtain grants and secure funding for future fuel reduction projects and other mitigation measures. The primary goals of the CWPP are to 1) reduce the risk of catastrophic wildfire and promote ecosystem health and 2) reduce home losses and provide for the safety of residents and firefighters during wildfire events (Colusa County 2021).

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 Local Hazard Mitigation Plan (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). The draft 2024 LHMP is available on the Colusa County website and final comments were due on August 21, 2024. The draft 2024 LHMP includes an updated list of hazards, assesses the likely impacts of these hazards to the people and assets the County planning area, and establishes updated goals and mitigation projects to reduce the impacts of future disasters on people and property, critical facilities and infrastructure, the environment, as well as to local economies; although it does not address potential hazards from BESS or solar farms (Colusa County 2024). The 2024 LHMP has not been finalized as of the date of publication of this draft EIR.

City of Williams Fire Code and Williams Fire Protection Authority Ordinance No. 20-01

The City of Williams adopted the California Fire Code through ratification of WFPA Ordinance No. 20-01. This ordinance delegates the WFPA as the local authority to enforce the California Fire Code. The Project would comply with all applicable requirements of the California Fire Code as enforced by WFPA, which is the primary fire protection service provider for the Project.

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, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?* **(Less than Significant)**

The Project site is located in a High Fire Hazard Severity Zone (FHSZ) within the SRA and is approximately 1.2 miles from the nearest Very High SRA (CAL FIRE 2024b). Accordingly, fire risk in the Project area is present. The primary fire protection services in the vicinity of the Project site are provided by the WFPA, and CAL FIRE provides additional wildland fire response for all SRAs.

As discussed in Section 4.9, 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. The detected levels of emissions from a thermal runaway event show that the levels of HF would not pose a hazard to emergency response personnel and would not cause ingress/egress to be suspended along Spring Valley Road. 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 design includes perimeter and internal access roads compliant with the California Fire Code that would allow operations and maintenance personnel, as well as emergency services providers to access the project site without obstructing traffic along Spring Valley Road, further avoiding impacts to emergency response, evacuation routes, and emergency access during construction and operation and maintenance.

The Project would comply with the current Fire and Building Codes. The construction, operation, and maintenance of the Project would not result in any road closures of public roads that could impact the response time of emergency vehicles. The Project site would have a single access point from Spring Valley Road, and heavy vehicles during construction of the Project could have the potential to interfere with emergency response or emergency evacuation. However, any interference with emergency response would be in relation to heavy vehicles either traveling to or from the Project site. Although Spring Valley Road is not a through roadway, no heavy vehicles would be situated within Spring Valley Road or any other roadway that would prohibit emergency response vehicles from accessing areas beyond the Project site. In the event that heavy vehicles are traveling along these roadways during an emergency response, such vehicles would be required to pull over to allow emergency vehicles to pass in accordance with State laws.

In the event of an emergency evacuation, all construction personnel would evacuate in accordance with local evacuation orders. As a conservative estimate, the highest potential interference with emergency evacuation would be during peak construction, when the greatest number of people would be located on the Project site. Although the peak on-site construction workforce would reach approximately 200 workers, which may slow evacuation from the area during peak construction, the Project would not substantially impair emergency evacuation

because this is a relatively low number of people and evacuation alerts are generally provided in stages, with an evacuation warning issued prior to an evacuation order. Thus, construction workers and the minimal number of local residents using Spring Valley Road would have time to safely evacuate the area with adequate warning from the County. In the event of an emergency at the BESS, emergency personnel would be directed on site, to maintain the flow of traffic along Spring Valley Road. In the unlikely event of a fire at the BESS, resulting in an evacuation order, emergency personnel would direct the flow of traffic to allow evacuation along Spring Valley Road. Although a slower evacuation could occur from the Project area to Spring Valley Road during Project construction as compared to existing conditions, the Project would not substantially impair the County's ability to enforce and implement evacuation orders. During Project operation, occasional on-site maintenance would be required, which would usually include up to four workers but may occasionally require 5 to 30 workers. Impacts would be less than significant.

With regard to adopted emergency response and emergency evacuation plans, there are no adopted emergency response or evacuation plans applicable to the Project. Relevant plans are discussed in Section 4.20.2, including the 2019 Strategic Fire Plan for California. The overarching goals of the Strategic Fire Plan are strategic initiatives to enhance fire response, prevention, and preparedness throughout the State, and this plan is not an emergency response or emergency evacuation plan. The 2019 Strategic Fire Plan does not contain specific policies or requirements but provides a broader framework for the State to focus and enhance fire safety issues. Although the Project is located in an SRA, the Project would not impair the State's ability to implement the 2019 Strategic Fire Plan for California. For example, implementation of the Project would not prohibit CAL FIRE from increasing funding, improving training, or expanding educational materials.

Similarly, the Project would not impair the County's ability to implement any of the provisions of the CWPP or the LHMP. Neither of these plans are emergency response or emergency evacuation plans. Rather, these are both strategic planning documents for the County to assess and plan for risks, including wildfire. The CWPP is specific to wildfire planning and the LHMP more generally applies to many types of natural and human-caused hazards, including wildfire. For example, the Project would not impair the County's ability to increase community/public outreach and education for various types of hazards nor would the Project prevent the County from identifying public and private assets at risk from wildfire. Accordingly, the Project would not substantially impair an adopted emergency response plan or emergency evacuation plan, and impacts would be less than significant.

IMPACT 4.20-2: *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, and 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 with Mitigation)**

As discussed previously, the Project site is located in a High Fire Hazard Severity Zone (FHSZ) within the SRA and is approximately 1.2 miles from the nearest Very High SRA (CAL FIRE 2024b).

Site-specific fire behavior modeling was also conducted for the Project in the *Fire Hazard Analysis Technical Memorandum* (Appendix K, Dudek 2024) and analyzed both the existing conditions and proposed Project conditions. Section 4.20.1.2, Vegetation/Fuels and Ignition Sources, describes the existing conditions modeling and results, shown in Table 4.20-1, Vegetation

Communities and Fuel Models, and Table 4.20-1, Fire Behavior Modeling Results – Existing Conditions.

The proposed Project conditions included three Fuel Modification Zones where vegetation management would occur. These are shown below in Table 4.20-3, Vegetation and Fuel Models – Proposed Project.

Table 4.20-3. Vegetation Communities and Fuel Models – Proposed Project

Vegetation Communities	Fuel Model	Description
Fuel Modification Zone 1	Nb1	Gravel, paved, or barren land
Fuel Modification Zone 2	Gr1 - customized	Grass mowed to stubble height (~2 inches)
Fuel Modification Zone 3	Gr1	Grass mowed to height of 4 inches

Fire behavior outputs for the existing Project site and proposed Project include flame lengths (feet), fireline intensities (Btu/feet/second), spotting distance (miles), and spread rates (feet/minute). Table 4.20-4, Fire Behavior Modeling Results – Proposed Conditions, provides fire behavior outputs for each vegetation type proposed for the Project site.

Table 4.20-4. Fire Behavior Modeling Results – Proposed Conditions

Vegetation Type	Flame Length (feet)*	Fireline Intensity (BTU/feet/second)	Spread Rate (ft/min)	Spotting Distance (miles)
Fuel Modification Zone 1	0	0	0	0
Fuel Modification Zone 2	2	26	14	0.2 (0.2)**
Fuel Modification Zone 3	3	44	30	0.2 (0.3)**

Note* Flame length values were rounded to the nearest foot.

Note** Represents spotting distances when considering 40 mph winds.

The fire behavior modeling for the proposed Project site conditions determined that:

- Within the Project's Fuel Modification Zones, using the same weather inputs, the resulting proposed Project flame lengths in the Fuel Modification Zones along the Project's perimeter and surrounding PV solar arrays and BESS facilities would be significantly reduced.
- The minimal vegetation maintenance in the areas between the arrays would include vegetation up to 12 inches in height and is appropriate. The Project-related infrastructure would be protected by the maintenance at their perimeter and throughout the developed areas.
    - Once reaching the Fuel Modification Zones, the wildfire behavior is altered noticeably; flame lengths are reduced to 3 feet in Zone 3, 2 feet in Zone 2, and 0 feet in Zone 1 due to the absence of vegetation.
- The modified vegetation closest to the arrays will provide the best protection for the solar modules and would greatly reduce the potential for an on-site fire to move off-site.

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 amounts of air pollutants, which can pose as a harmful exposure to first responders such as firefighters, as well as the surrounding communities. Furthermore, environmental conditions such as slopes and winds can affect the spread of wildfire. As slopes increase and wildfires move uphill, the burn rate is increased. The Project site includes relatively flat topography surrounded by rolling hills, and sparse vegetation. Although there is topographical variation throughout the Project site and surrounding area, there are not steep slopes or significant elevation changes in the immediate vicinity of the Project site that could have the potential for fires to spread upslope. There are also no mapped landslides on or around the Project site, indicative of steep slopes that could exacerbate the spread of wildfire (DOC 2024). Existing regional wind conditions, such as the Diablo Winds, would not change significantly due to the construction or decommissioning activities of the Project. The regional wind patterns are a result of the larger landscape, including proximity to the California coast and higher-elevation mountain ranges (Fire Safe Marin 2024). The Project is not located in a mountainous area, nor does it include grading such that regional topography would change. While the Diablo Winds are possible at the Project site, the wind speeds are expected to be less severe compared to areas within and west of the coastal range (Appendix K). Regardless, fire behavior in the grass fuels present within and adjacent to the Project site reaches maximum severity at wind speeds of roughly 20 mph. Therefore, the maximum 22 mph wind speed utilized for the fire behavior modeling is considered the most extreme possible fire behavior. Furthermore, as described in mitigation measure **FIRE-1**, the vegetation across the Project site would be maintained in accordance with the Project's Vegetation Management and Wildfire Prevention Program to a level similar or below the existing conditions, and include Fuel Modification Zones, as described in Appendix K, that would minimize the potential for an on-site fire to spread off-site. 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 relatively flat topography and lack of steep slopes in the immediate vicinity of the Project site, adequately managed vegetation on-site and distance to population centers, a potential ignition from Project construction is not likely to lead to the spread of wildfire. Although fire risk is present in the region and there is a history of fires occurring within the County as described in Section 4.20.1.3 above, the Project would not include any occupants that could be exposed to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. Accordingly, impacts would be less than significant.

Operation

The Project would include a BESS and other supporting electrical equipment elements that may be susceptible to fire. However, the BESS 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, Colusa County, and the WFPA, to minimize risk of fire from stationary BESS 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

BESS would include multi-layer fire safety and protection systems (see the BESS design and safety features detailed in Section 4.9.1.4 of Section 4.9, Hazards and Hazardous Materials). Additionally, Project design features such as Fuel Modification Zones, as described in Appendix K, and vegetation management, as outlined in mitigation measure FIRE-1, would significantly reduce the risk and intensity of a fire on-site, compared to the current Project site conditions. Intermittent maintenance activities could increase the potential for ignition on-site due to the presence of vehicles and use of equipment; however, the Project would not include any occupants that could be exposed to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. Project operational activities would also not significantly change the region's existing wind conditions, such as the Diablo Winds, and therefore, not result in a significant impact to existing wildfire risks. Accordingly, impacts 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?* **(Less than Significant Impact with Mitigation Incorporated)**

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. In accordance with mitigation measure **FIRE-1**, as detailed below, which requires the development of a Vegetation Management and Wildfire Prevention Plan that specifies that the site should be free of combustible vegetation with ground cover maintained to a maximum height of 12 inches adjacent and beneath the solar racking, and include Fuel Modification Zones around the BESS and Substation, and outside of the PV solar arrays, as well as along the project site perimeter. Vegetation management in these areas would reduce the existing fuel load as described above in Section 4.20.1.2, Vegetation/Fuels and Ignition Sources, and Appendix K, significantly reducing the fire intensity along the project's perimeter and surrounding PV solar arrays, and BESS and substation facilities. The project Vegetation Management Plan would include the Fuel Modification Zones, recommended as a result of the site-specific fire behavior modeling and include three zones:

- Zone 1: Non-combustible, pervious surface (gravel, DG, or similar).
    - 0-30 feet from BESS and Substation.
    - Zone 1 will be free of vegetation and all combustible materials. Zone 1 will occur surrounding the onsite BESS facility and substation. This Zone will be created to 30 feet from all electrical equipment and battery storage systems.
- Zone 2: Grass mowed to stubble height (~ 2 inches).
    - 0-20 feet from the Project's perimeter.
    - Zone 2 will consist of mowed grass to stubble height within 20 feet of the Project's perimeter edge. It is expected that mowing will occur late spring prior to fire season as directed by the Williams Fire Authority and will continue as necessary to maintain the Zone 2 grass at stubble height.
- Zone 3: Grass mowed to 4 inches in height.
    - 0-20 feet from all PV arrays, 30-100 feet from BESS and Substation

- Zone 3 will result in the mowing of grasses to 4 inches in height within 20 feet of PV arrays and within 30-70 feet from the BESS and Substation to reduce wildfire behavior in the Project site's grasslands to an acceptable level. It is expected that mowing will occur late spring prior to fire season as directed by the Williams Fire Authority and will continue as necessary to maintain the Zone 3 grass to a mowed height of 4 inches or less. No vegetation management will be conducted within Crotch's bumble bee avoidance areas.

As discussed in more detail in Section 4.9, Hazards and Hazardous Materials, the proposed solar PV panels would be made from a polycrystalline silicon or thin-film technology. Polycrystalline silicon PV panels may include cadmium telluride (CdTe) technology. Burning in the California annual grassland, unless woody debris and accumulated mulch are present, results in soil surface temperatures less than 200°F degrees Fahrenheit, (Bentley and Fenner 1958), well below the melting point for CdTe. 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 degrees Fahrenheit (°F).

The Project would also employ an Emergency Services Response Plan (ESRP), and a 50,000-gallon water storage tank would be constructed on-site with hose and truck hook-up connections compatible with responding fire apparatus. Additionally, the Emergency Services Response Plan would include measures that could include but would not be limited to, coordination and communication procedures with the fire department and other first responders, shutdown procedures, site personnel training, identification of evacuation routes, traffic control, and maintenance of Safety Data Sheets. The Project would also include powerlines (including the proposed gen-tie line) and other electrical components, such as transformers, inverters, substations, maintenance vehicles, gas/electric-powered machinery, and batteries. The proposed gen-tie line would be required to comply with transmission vegetation management standards established by North American Electric Reliability Corporation (NERC). Additionally, fire breaks would be required along the Project boundary.

The Project would be designed in compliance with federal, state, and local fire protection codes and regulations, which would minimize the potential for the occurrence of fire. The Project, including the BESS, would have a fire rating in conformance with local fire authority (WFPA) and County standards, via compliance with the 2022 California Fire Code. The Project's fire protection design will also comply with California Fire Code Section 1207 Electrical Energy Storage Systems, which adopts the NFPA Standard for the Installation of Stationary Energy Storage Systems (NFPA 855). Project maintenance and operation may introduce potential ignition sources, such as transformers, inverters, electric transmission line (including the gen-tie line), substations, maintenance vehicles, gas/electric-powered machinery, and batteries. However, the potential fire risk is low for these Project components due to stringent protections set forth in the California Fire Code. All battery components for the BESS would be installed on steel pile, grade-beam, or concrete foundations and contained within metal enclosures to minimize the potential for sparks or ignition. Fire detection measures would be incorporated in the Project design in accordance with NFPA safety standards. Vegetation management would also occur along the gen-tie corridor and around the associated transmission towers in accordance with the 2022 California Fire Code and California Public Resources Code (PRC) requirements.

As related to the BESS, the selected battery technology for the Project would comply with UL 9540A testing as required by mitigation measure **FIRE-1**. UL 9540A testing is performed by the battery manufacturer/vendor to prevent thermal runaway and mitigate fire risk. Some of the measures to mitigate fire risk include ventilation, air conditioning, early smoke detection, alarms,

and remote monitoring. The Project's BESS would also be equipped with a Battery Management System, which would constantly track indicators such as temperature, gas, and smoke. Refer to Section 4.9, Hazards and Hazardous Materials, for additional information. Furthermore, installation of all Project components, including battery units, will follow manufacturer specifications to further potential fire hazards.

These measures (e.g., dust suppression) and Project components (i.e., batteries and gen-tie) are considered to be part of the Project. Accordingly, the environmental impacts that could result from Project measures and components have been analyzed throughout this EIR, and no additional impacts (beyond those that are identified in this EIR) would occur. The Project would not require the installation or maintenance of associated infrastructure outside of these Project measures and components included as part of the Project and analyzed in this EIR.

However, the Project components themselves would exacerbate fire risk on the Project site and impacts would be significant without mitigation. Accordingly, the Project would include mitigation measure **FIRE-1**, which requires the development of a Vegetation Management and Wildfire Prevention Plan and an Emergency Services Response Plan. Implementation of these plans would mitigate fire risk from project components by developing protocols and best management practices for the Project as related to wildfire prevention, vegetation management, and emergency response. Furthermore, these plans would be developed with input from the County and the WFPA, and building permits would not be approved for the Project until these mitigation plans are approved by these authorities. With implementation of mitigation measure **FIRE-1**, the Project would have a less than significant impact related to the installation or maintenance of associated infrastructure 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)**

As discussed in Impact 4.20-1, the Project site is located in a High FHSZ within the SRA. Accordingly, fire risk in the Project area is present. The Project site is in a relatively flat area, where development of the Project would not significantly affect runoff and drainage patterns. Site preparation and grading would be required. However, no grading that may obstruct, impede, or interfere with the natural flow of storm waters outside of the Project site and gen-tie corridor would occur. Following the completion of construction, drainage patterns on-site would be similar to existing conditions. Drainage would also be adequately managed during Project operation through proper site design and post-development stormwater run-off would not exceed pre-development conditions, pursuant to County standards.

As discussed in Section 4.10, Hydrology and Water Quality, a Stormwater Pollution Prevention Plan (SWPPP) would be developed and implemented during site preparation and construction activities. The SWPPP would incorporate stormwater best management practices (BMPs) to control erosion, sediment transport, and pollutant discharge during construction. The SWPPP would apply to the entire Project, including within the Project site and along the gen-tie corridor. Such practices include, for example, the use of water trucks to manage dust; silt fencing, straw wattles, 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. Overall, as discussed in Section 4.10, Hydrology and Water Quality, impacts associated with runoff and erosion due to water flows would be less than significant. Finally, as the Project site is relatively flat and there are no mapped landslides on or around the Project site (DOC 2024), the risk for post-fire slope instability does not exist. Thus, the Project would not result in changes to runoff, slope instability, or drainage patterns that have the potential to exacerbate downslope or downstream flooding or landslides and thereby expose people or structures to associated risks.

Regarding the exposure of people or structures to wildfire risks, the Project would not result in the exposure of construction or operation workers to significant wildfire risks, as discussed under the previous Impacts 4.20-1, 4.20-2, and 4.20-3 above. Additionally, although fire risk does exist in the Project area and the Project site is within a High FHSZ, potential fire risk of Project structures and components would be low, including from solar panels, transformers, inverters, electric transmission line (including the gen-tie line), substations, maintenance vehicles, gas/electric-powered machinery, and batteries. All battery components for the BESS would be installed on steel pile, grade-beam, or concrete foundations and contained within metal enclosures to minimize the potential for sparks or ignition. Fire detection measures, such as those discussed in Section 4.09 Hazards, would be incorporated in the Project design in accordance with NFPA safety standards. Such measures would reduce wildfire risk on-site, thereby reducing the secondary risk of runoff, post-fire slope instability, or drainage changes due to on-site fires.

Other people and structures with the potential to be exposed to runoff, post-fire slope instability, or drainage changes include rural residences and agricultural buildings located in the vicinity of the Project site. The closest residence is located approximately 100 feet south of the Project site and five additional residences are in proximity to the Project site to the north, south, and west. Agricultural buildings also exist to the west of the Project site across Spring Valley Road. However, for the reasons previously discussed under Impacts 4.20-1, 4.20-2, and 4.20-3 above, these residences would not be exposed to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Overall, the Project would not result in changes to runoff, slope instability, or drainage patterns that have the potential to exacerbate downslope or downstream flooding or landslides. Thus, the Project would have a less than significant impact with regard to the exposure of people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

4.20.5 Mitigation Measures

The following mitigation measures are recommended to reduce significant wildfire impacts.

FIRE-1: Wildfire Protection Measures

- **Vegetation Management and Wildfire Prevention Plan**. Prior to building permit issuance, a Vegetation Management and Wildfire Prevention Plan shall be submitted to the Williams Fire Protection Authority and the County for review and approval. This Vegetation Management and Wildfire Prevention Plan shall detail implementation measures to control and maintain the vegetation throughout the Project site to eliminate wildland fire hazards to a level determined satisfactory by the Williams Fire Protection Authority Fire Chief.

Implementation measures shall include three Fuel Modification Zones:

- Zone 1: Non-combustible, pervious surface (gravel, DG, or similar).
  - 0-30 feet from BESS and Substation.
  - Zone 1 will be free of vegetation and all combustible materials. Zone 1 will occur surrounding the onsite BESS facility and substation. This Zone will be created to 30 feet from all electrical equipment and battery storage systems.
- Zone 2: Grass maintained at stubble height (~ 2 inches).
  - 0-20 feet from the Project's perimeter.
  - Zone 2 will consist of mowed grass to stubble height within 20 feet of the Project's perimeter edge. It is expected that mowing will occur late spring prior to fire season as directed by the Williams Fire Authority and will continue as necessary to maintain the Zone 2 grass at stubble height.
- Zone 3: Grass maintained at 4 inches in height.
  - 0-20 feet from all PV arrays, 30-100 feet from BESS and Substation
  - Zone 3 will result in the mowing of grasses to 4 inches in height within 20 feet of PV arrays and within 30-70 feet from the BESS and Substation to reduce wildfire behavior in the Project site's grasslands to an acceptable level. It is expected that mowing will occur late spring prior to fire season as directed by the Williams Fire Authority and will continue as necessary to maintain the Zone 3 grass to a mowed height of 4 inches or less. No vegetation management will be conducted within Crotch's bumble bee avoidance areas.

Vegetation management shall be implemented through mechanical cutting (mowing and trimming). The Vegetation Management and Wildfire Prevention Plan shall require installation and proper maintenance of access roads/fire breaks throughout the Project site, regularly conducting inspections of the Project components, properly storing flammable materials, requiring that UL Listed Portable Fire Extinguishers of the appropriate type be located throughout the Project site, and/or the installation of sprinkler heads where determined necessary.

- **Emergency Services Response Plan**. Prior to any building permit issuance, an ESRP shall be submitted to the Williams Fire Protection Authority and the County for review and approval. This ESRP shall adequately describe the Project design and layout according to as-built drawings, and detail specific fire suppression and protection measures that will be implemented in the entire facility, including the BESS, to eliminate fire hazards, as well as detailed information about the emergency response strategy so that first responders are well equipped to effectively respond to a call for service, if there were any. The ESRP will also take into account recommendations provided by the BESS supplier. The ESRP will also include defined roles and responsibilities. Measures could include but would not be limited to, coordination and communication procedures with the fire department and other first responders, shutdown procedures, site personnel training, identification of evacuation routes, traffic control, and maintenance of Safety Data Sheets. The ESRP will be made to the satisfaction of and require approval from the Williams Fire Protection Authority Fire Chief. Such measures shall include but not be limited to the following:

  - On-site water storage shall include a 50,000-gallon water storage tank with hose and truck hook-ups connections compatible with responding fire apparatus. The source and supply for the water shall be clearly identified.

  - Battery container spacing shall be determined based on UL 9540A test data, manufacturer recommended separations, and potentially a heat flux analysis utilizing computational fluid dynamic modeling software. The computational fluid dynamic modeling shall be submitted for review and approval.

  - The battery containers shall receive a UL 9540 certification. If a UL 9540 certification cannot be provided, a Nationally Recognized Testing Laboratory, approved by the Williams Fire Protection Authority and qualified to conduct the field testing, shall conduct a field evaluation of one typical system utilizing the field evaluation procedures detailed by that testing laboratory, as approved by the Williams Fire Protection Authority. Upon passing the field test, the testing laboratory shall provide a label certifying that the system has been evaluated to UL 9540 standards and meets or exceeds these standards. The Project Owner is responsible for making any and all required changes to the battery storage units to obtain the UL 9540 certification or the testing equivalent to the satisfaction of the Williams Fire Protection Authority. Should the Project Owner place on the site more than one battery storage prior to obtaining approval of the Williams Fire Protection Authority of the UL 9540 certification or the testing equivalent, it does so at its own risks and no battery storage unit shall be connected, operational, and/or energized in any way until such certification approval is obtained and any required modifications have been made to the satisfaction of the Williams Fire Protection Authority. Should the test battery storage unit require being connected and/or energized to perform the field certification testing, the Williams Fire Protection Authority may approve said connection and/or energization based on its sole discretion subject to any additional requirements.

- Compliance with all provisions of 2022 California Fire Code, Section 1207, including the preparation of a hazard mitigation analysis.

- As part of the siting and design of the BESS, a setback of more than 500 feet shall be included to prevent Spring Valley Road from being closed to two-way through traffic in the event of an emergency response at the Project site. Prior to fire permit issuance, the setback and access shall be reviewed and approved by the WFPA Fire Chief.

- In addition to what is included in the ESRP, the Applicant will be required to provide training on how to adequately respond to a fire event on the Project site to the WFPA. The Applicant may also provide appropriate training to and surrounding jurisdictions that may potentially respond to a call for service at the Project site.

4.20.6 PG&E Cortina Substation Improvements

To accommodate the Project, PG&E would construct network upgrades and interconnection facilities, which include an approximately 1,000-foot portion of the Project's gen-tie line that would extend from the Project's point of change of ownership (POCO) pole, located at or near the PG&E

Cortina Substation property line, to the point of interconnection (POI) located at the Project's bay within the existing footprint of the PG&E Cortina Substation. All PG&E improvements, including the 1,000-foot span of gen-tie line, would be constructed within the existing PG&E Cortina Substation property boundary or affect existing PG&E structures. To accommodate the gen-tie line, PG&E would potentially replace two existing 115 kV transmission structures west of the PG&E Cortina Substation with steel poles and increase the current height of 110 feet to a maximum height of up to 125 feet, and within the PG&E Cortina Substation property relocate up to two existing poles to create space for entry of the Project's gen-tie line.

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 PG&E 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.

These improvements are not likely to impede or conflict with any emergency plans or evacuation routes nor would they 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. Given the height of the existing transmission line and associated infrastructure in the immediate vicinity of the improvements, the additional 15-foot height increase would also not interfere with any local agricultural aircraft, as they already have to be avoided. Therefore, the PG&E Cortina Substation improvements would have no significant impact on criteria described for Impacts 4.20-1 through 4.20-4. No additional mitigation measures would be required.

4.20.7 Cumulative Impacts

The Project would have a less than significant impact on the 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. However, as wildfire risks still exist, and project components could have the potential to exacerbate fire risk on the Project site, the Project would include implementation of mitigation measure **FIRE-1**, which requires the development of a Vegetation Management and Wildfire Prevention Plan as well as an Emergency Services Response Plan. In combination with other Projects in the vicinity, the Project could increase the potential for ignition

sources; however, given the flat topography, the lack of vegetation within the geographic scope of cumulative impacts, and the implementation of mitigation measure **FIRE-1**, 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.

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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 range of alternatives that could attain most of the basic project objectives, while avoiding or reducing a proposed 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 or substantially lessen 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 five alternatives to the proposed Project analyzed in this section are as follows:

No Project: The Project site would not be developed and would remain in its existing condition and continue to be used for dryland cattle grazing.

Distributed Solar: The Distributed Solar alternative would develop solar PV systems on existing rooftops throughout Colusa County.

Solar Only: The Solar Only alternative would build an 80 MW solar PV facility without an on-site Battery Energy Storage System (BESS).

Undergrounded Gen-Tie: The Undergrounded Gen-Tie alternative would include the same facilities as the proposed Project, with the exception of constructing the gen-tie line as an underground facility rather than overhead. The 4-mile gen-tie corridor to the point-of-interconnection (POI) at PG&E Cortina substation would remain the same.

Northeast Site: An alternate site, which consists of 15 contiguous parcels totaling approximately 917 acres located approximately 5 miles northeast of the proposed Project site, on the north side of Highway 20 and just west of Williams. See Figure 5-1.

A comparison of the alternatives is included in Table 5-1 and the following sections.

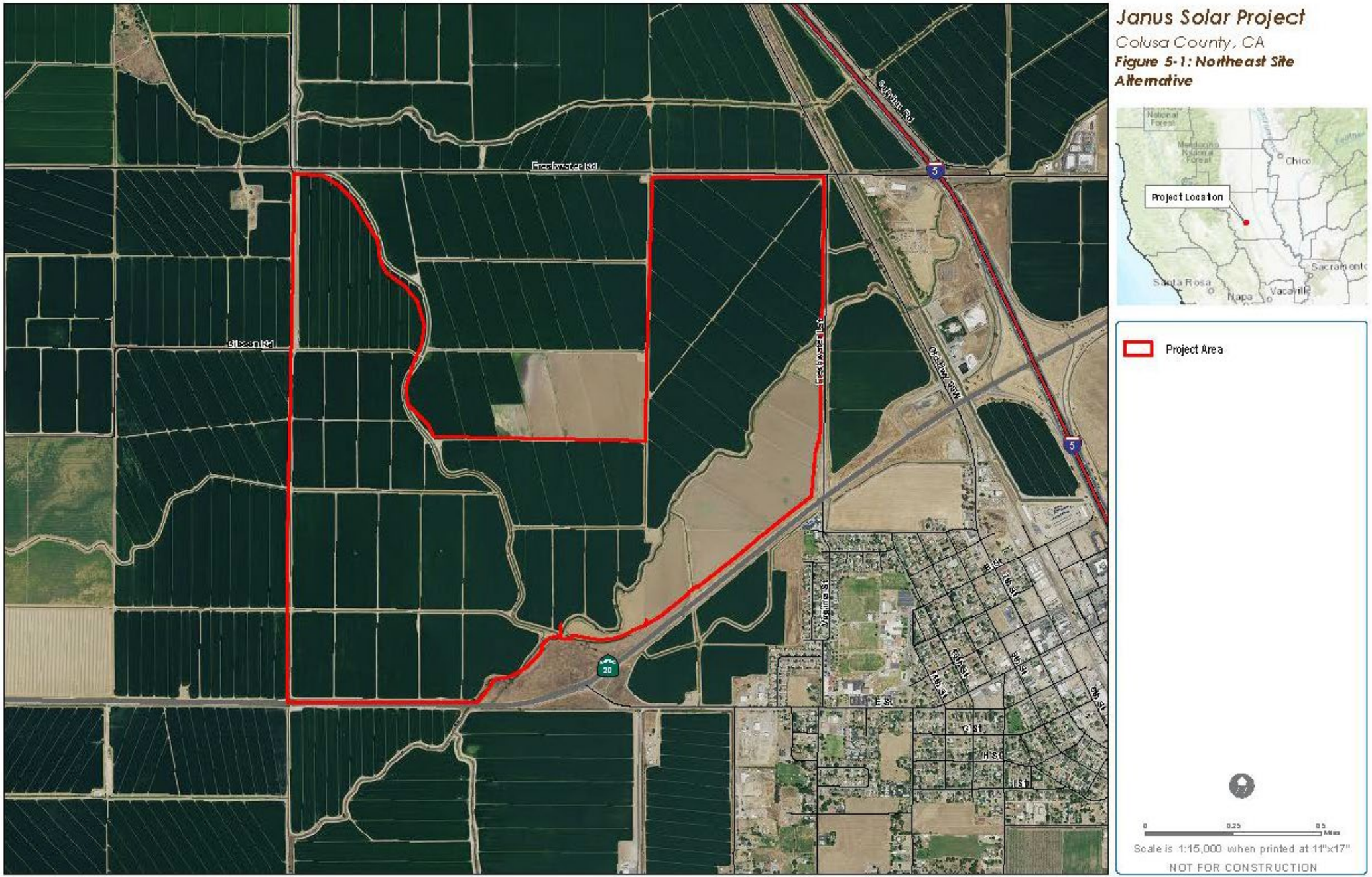

Figure 5-1. Northeast Site Alternative

5.2 PROJECT OBJECTIVES

1. Establish a solar PV power generation and BESS facility, including supporting infrastructure, 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 California Public Utilities Commission (CPUC) Energy Storage Framework and Design Program.
4. Establish an environmentally beneficial and economically viable use of the Project site in light of its limited access to water.
5. Develop a solar PV power generation and BESS facility in proximity to established electrical infrastructure to minimize environmental impacts and efficiently interconnect to the electrical grid.
6. Facilitate cost-effective grid integration of intermittent and variable solar PV generation and minimize line losses associated with off-site storage by co-locating a BESS with the solar PV generation facility at the Project site.
7. Develop a solar PV power generation and BESS 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.

5.3 NO PROJECT

For the No Project alternative, the Project site would continue to be used for agricultural grazing and the existing environmental setting would be maintained. Based on available information, there is no evidence to suggest that alternative agricultural uses (e.g., irrigated crops) are likely to occur on the site based on available infrastructure, including, e.g., irrigation infrastructure and the availability of water supply to support water-intensive crops. 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 greenhouse gas (GHG) reduction related to renewable energy generation and storage would not be realized from solar and BESS development of the site. It is reasonable to assume that the land would continue to be used for agricultural grazing 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 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.

5.3.1 Impact Analysis

Aesthetics

Under this alternative, there would be no development of solar PV panels, BESS, or ancillary structures (including the gen-tie line). No changes in the visual setting would occur, therefore there would be no impacts.

Agriculture/Forestry

Under the No Project alternative, the Project site would continue to be used for dry land grazing. 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 and storage would not be realized from solar and BESS 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 and storage would not be realized from solar and BESS 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 or water quality 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 and BESS 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 an environmentally superior alternative as no impacts would occur if the proposed Project site were to remain undeveloped. However, none of the seven Project objectives would not be met, and the environmental benefits associated with energy resources and GHG reduction resulting from renewable energy generation and storage would not be realized from solar and BESS development of the Project site.

5.4 DISTRIBUTED SOLAR
The Distributed Solar alternative would develop solar PV facilities on the existing rooftops throughout Colusa County and would not include energy storage, such as the BESS included in the proposed Project. The Distributed Solar alternative was selected for analysis because it would eliminate the need to site energy generation and storage on property currently used for grazing and because it would reduce other environmental impacts compared to the proposed Project.

5.4.1 Impact Analysis
Aesthetics
Under the Distributed Solar alternative, solar panels would be placed on top of existing structures across Colusa County. 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, the Project site would continue to be used for dryland grazing. If solar PV systems were installed on buildings (i.e., existing structures), it would avoid co-locating panels on land designated for agriculture. 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 would have no impact on agricultural or forestry resources.

Air Quality

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 Distributed Solar alternative may result in the generation of lower dust emissions, further reducing the Project's already less than significant impact.

Biological Resources

Under the Distributed Solar alternative, 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 proposed Project, would assist the State in achieving or exceeding its RPS and GHG emissions reduction objectives by developing and constructing a new RPS-qualified 80 MW solar power generating facility. Under the Distributed Solar alternative, a larger surface area would likely 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. Furthermore,and no energy storage component would be included. 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 also 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 less than significant impacts to energy, but greater than those of 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 proposed Project.

Greenhouse Gas Emissions

The Distributed Solar alternative would not involve ground disturbing activities that may result in increased 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 regarding the generation of GHG emissions, similar to the Project.

Hazards and Hazardous Materials

Under the Distributed Solar alternative, little to no hazardous materials would be used. 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. No BESS would be included. 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 greater total acreage (666 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 significant impacts to hydrology and water quality as there would be no ground disturbance activities associated with this alternative. Therefore, the impacts of this alternative would be reduced 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. This analysis assumes that installation of the rooftop solar systems would be consistent with the County's General Plan policies and Zoning Ordinance. As a result, there would be no impact to and 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 for solar PV systems. The acreage may be greater (666 acres or more of total rooftop area) to meet the 80 MW solar

PV generating capacity of the proposed Project. Vehicle trips for construction and maintenance of the solar panels would be necessary and dispersed with individual site locations. 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, such as residences or schools. The Distributed Solar alternative would result in less than significant impacts to both noise and vibration impacts from construction-related activities and operational noise impacts, similar to the Project. No BESS facilities would be included, such that operational noise specific to BESS would be less than the Project.

Population and Housing

This alternative would utilize rooftops of existing buildings 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 demand for public services. The Distributed Solar alternative would result in no impact to public services, 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 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 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. Stormwater drainage would not be affected by this alternative. The installation, operation, and maintenance of rooftop solar systems would rely on existing utilities, resulting in less generated water demands, solid waste, wastewater or stormwater need compared to the proposed Project. The potential impacts to utilities would be reduced compared to the proposed 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 ignition; 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. BESS would not be included, such that the impacts of the Distributed Solar alternative would be 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 would be reduced, take longer to achieve, and would require many individual projects with varying capacities, such that the number of individual projects and their likelihood of being built is difficult to predict or guarantee. Further, neither the Project applicant nor the County controls access to the quantity of privately-owned rooftops within the County's jurisdiction that would be necessary to support generating even a portion of the 80 MW of electricity that is an essential Project objective; thus, it is unlikely that this alternative could be feasibly implemented. The Distributed Solar alternative would not efficiently meet the Project Objectives to generate 80 MW of electricity at the POI (Project Objective 1), it would not include BESS that would assist meeting the CPUC Energy Storage Framework and Design Program (Objective 3), and 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 potentially be feasible, but not an efficient or effective alternative.

5.5 SOLAR ONLY

The Solar Only alternative would build an 80 MW solar PV facility without the BESS. The Solar Only alternative was selected for analysis as it would reduce certain environmental impacts by disturbing approximately 4 acres less than the proposed Project. This alternative would not meet all of the Project objectives.

5.5.1 Impact Analysis

Aesthetics

Impacts would be similar to the proposed Project. Though BESS is not included, views of the site would be similar to the proposed Project and aesthetic impacts would be less than significant.

Agriculture and Forestry Resources

The Solar Only alternative is located on the same property as the proposed Project, which is subject to a Williamson Act contract. It is not prime farmland and is not irrigated, and has historically been used to graze cattle. Like the proposed Project, the Solar Only alternative would allow the landowner to continue to cattle grazing on unused portions of the site during construction and operation without reducing the size of the herd as a result of the Project. Therefore, impact to agricultural and forestry resources would be less than significant and similar to the proposed Project.

Air Quality

By excluding the BESS, the Solar Only alternative would reduce ground disturbance by 4 acres, compared to the Project. The number of vehicles and heavy equipment used to achieve 80 MW of solar capacity would be the same as the proposed Project. Mitigation measures **AQ-1** through **AQ-3** would be implemented to mitigate dust and other construction emissions. Impacts to air quality would be less than significant with mitigation and similar to the impacts of the proposed Project.

Biological Resources

The Solar Only alternative would reduce the amount of disturbed land by approximately 4 acres due to the absence of the BESS, such that 662 acres would be disturbed to construct solar PV panels and associated facilities. While this alternative would slightly reduce the acreage of potentially disturbed habitat, impacts would be similar to the proposed Project at a minimally reduced scale. Implementation of mitigation measures **BIO-1** through **BIO-3** would reduce impacts of the Solar Only alternative to less than significant, similar to the Project.

Cultural Resources

The Solar Only alternative would reduce the area of disturbed land by 4 acres due to the absence of BESS facilities. Potential impacts to cultural resources may be reduced slightly compared to the proposed Project due to the slightly smaller footprint. Implementation of mitigation measures **CUL-1** through **CUL-3** would reduce impacts to less than significant, similar to the Project.

Energy

Under the Solar Only alternative, a similar amount of gasoline and diesel used would be used during construction, operation, and decommissioning compared to the proposed Project. This alternative would not result in wasteful, inefficient, or unnecessary consumption of energy resources, and impacts would be less than significant, similar to the proposed Project. Without the inclusion of a BESS, energy would be directly transferred to the electrical grid after generation and could not be stored for future use; the energy resources benefits would be less than the proposed Project.

Geology, Soils, and Paleontology

The Solar Only alternative would result in slightly less ground disturbance than the proposed Project due to the lack of BESS facilities. Impacts under this alternative would be similar to the proposed Project. To mitigate potential impacts to paleontological resources, mitigation measures **GEO-1** and **GEO-2** would be implemented, and impacts would be less than significant.

Greenhouse Gas

The Solar Only alternative would use the same number of vehicles and heavy equipment as the proposed Project. Impacts would be less than significant and similar to the proposed Project.

Hazards and Hazardous Materials

With the absence of the BESS in the Solar Only alternative, hazardous materials associated with the BESS would no longer be located on site. An NPDES Construction General Permit would still be required to reduce the potential impacts to stormwater runoff and would reduce the potential impacts to less than significant. The use of hazardous materials would be minimal, and impacts would be less than the proposed Project.

Hydrology and Water Quality

The Solar Only alternative would not include the BESS, such that the impervious surfaces would be reduced by approximately 4 acres. Water needs during construction and operation would remain the same as the proposed Project. An NPDES Construction General Permit and other existing regulatory requirements would still apply to the Solar Only alternative, and impacts to hydrology and water quality would be less than significant, similar to the proposed Project.

Land Use and Planning

The Solar Only alternative would not divide an established community or impact the land use policies or regulations. Impacts to land use would be similar to the proposed Project and would be less than significant.

Mineral Resources

The Solar Only alternative would 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

Construction of the Solar Only alternative would have similar noise impacts to the Project, and mitigation measure **NOISE-1** would be implemented to reduce these impacts to less than significant. The BESS facilities would not be included under the Solar Only alternative, such that operational noise associated with the BESS would be reduced compared to the Project and would also be less than significant.

Population and Housing

The Solar Only alternative would require a similar workforce and duration of construction, operations, and decommissioning. The Solar Only 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 Solar Only alternative would be located on land used for cattle grazing and would result in no displacement of people or existing housing.

Public Services

Like the Project, the Solar Only alternative would not result in an increase in population or an associated increase in demands on police, schools, parks, and other public services such that altered or new facilities would be required and there would be no impact. With the implementation of mitigation measure **FIRE-1**, impacts to emergency services would be less than significant.

Recreation

Similar to the Project, the Solar Only alternative would not result in population growth within Colusa County and would not affect the County's ability to meet the existing demand for park and recreation services.

Transportation

The Solar Only alternative would include approximately the same number of worker trips as the Project. By implementing mitigation measure **TRANS-1**, potential damage to roadways from construction traffic would be less than significant, similar to the Project.

Tribal Cultural Resources

The Solar Only alternative would reduce the amount of disturbed land by approximately 4 acres, compared to the Project. Through the implementation of mitigation measures **CUL-1** through **CUL-3**, potential impacts to tribal cultural resources due to ground disturbance would be reduced to less than significant, similar to the proposed Project.

Utilities

The Solar Only alternative would require similar water use during construction, operations, and decommissioning as the proposed Project and would generate similar amounts of sanitary and solid waste. Impacts to utilities would be similar to the proposed Project and would be less than significant.

Wildfire

The Solar Only alternative would not include the BESS, such that potential ignition sources would be reduced compared to the proposed Project. A Wildland Fire Management Plan would be implemented as part of compliance with mitigation measure **FIRE-1**, and the wildfire impacts would be less than significant and less than the proposed Project.

Conclusion and Relationship to Project Objectives

The Solar Only alternative would disturb 4 fewer acres than the proposed Project. Impacts to air quality, biological resources, cultural resources, geological and paleontological resources, hazards, hydrology, noise, tribal resources, and wildfire would be less than the proposed Project. However, without the inclusion of the BESS, Project Objectives 1, 3, 4, 5, 6, and 7 would not be met. Under this alternative, BESS facilities would not be included, such that this alternative would not stablish a solar PV power generation and BESS facility (Objective 1), assist California utilities to meet their obligations under CPUC's Energy Storage Framework and Design Program (Objective 3), reduce the environmental benefits of providing reliable energy to the grid that would

also make the Project economically viable (Objective 4), or include BESS in proximity to established electrical infrastructure (Objective 5). The Solar Only alternative would not facilitate cost-effective grid integration of intermittent and variable solar PV generation (Objective 6) or develop a solar PV power generation and BESS 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 (Objective 7).

5.6 UNDERGROUNDED GEN-TIE

The Undergrounded Gen-Tie alternative would place the gen-tie line connecting the energy generating facilities to the PG&E Cortina Substation underground rather than overhead. The Undergrounded Gen-Tie alternative was selected for analysis to reduce some of the environmental impacts; however, due to the additional ground disturbance compared to the proposed Project, some environmental impacts would be increased. However, this alternative would not meet a majority of the Project objectives and is infeasible as further described below.

5.6.1 Impact Analysis

Aesthetics

Because the gen-tie would be underground, this alternative would have fewer visible facilities. However, this alternative would still include the entirety of the solar and BESS, as well as supporting infrastructure and therefore would have impacts similar to the Project but would still at have less than significant impacts to aesthetic resources.

Agriculture and Forestry Resources

Impacts to Agriculture and Forestry Resources for the Undergrounded Gen-Tie alternative would be the same as the proposed Project. The Solar Facility and BESS would be located on the same site as the Project, which is not designated as prime farmland and is used for cattle grazing. The gen-tie line would be partially constructed in the existing County ROW, similar to the proposed Project. Therefore, impacts to Agriculture and Forestry Resources would be less than significant, similar to the proposed Project.

Air Quality

To locate the 4-mile-long gen-tie line underground, the Undergrounded Gen-Tie alternative would disturb more ground and would require additional construction equipment compared to the proposed Project. Dust and other emissions from additional construction equipment would be greater than the proposed Project; however, the Undergrounded Gen-Tie alternative would implement mitigation measures **AQ-1** through **AQ-3** to reduce dust and other emissions and mitigate impacts to air quality to less than significant, similar to the Project.

Biological Resources

The Undergrounded Gen-Tie alternative would disturb more ground than the proposed Project to place the 4-mile-long gen-tie line underground rather than overhead. The additional ground disturbance would result in greater potential to impact biological resources. It is anticipated that the Undergrounded Gen-Tie alternative would implement mitigation measures **BIO-1** through

BIO-3 to reduce impacts to less than significant; however, the increased ground disturbance would result in greater potential to affect habitat of sensitive species.

Cultural Resources

Locating the 4-mile-long gen-tie underground would result in a greater potential for inadvertent discovery of and impacts to cultural resources compared to the proposed Project. It is anticipated that the Undergrounded Gen-Tie alternative would implement mitigation measures **CUL-1** through **CUL-3** to reduce impacts to less than significant; however impacts would be increased compared to the proposed Project.

Energy

The Undergrounded Gen-Tie alternative would require additional heavy equipment to excavate and bury the 4-mile-long gen-tie line, increasing the consumption of diesel fuel and gasoline compared to the Project. Though this alternative would not require substantial consumption of energy during operations, such that it would not result in wasteful, inefficient, or unnecessary consumption of energy resources, the Undergrounded Gen-Tie alternative's impacts to energy resources would be greater than the proposed Project, but still less than significant.

Geology, Soils, and Paleontology

The Undergrounded Gen-Tie alternative would include ground disturbance of an approximately 4-mile-long corridor to connect energy generating facilities to the PG&E Cortina Substation. Mitigation measures **GEO-1** and **GEO-2** would be implemented to reduce potential impacts to paleontological resources to less than significant; however, the potential to encounter and disturb paleontological resources would be greater than for the proposed Project.

Greenhouse Gas

The Undergrounded Gen-Tie alternative would require additional heavy equipment to bury the 4-mile-long gen-tie line, increasing GHG emissions. Similar to the Project, due to the minimal equipment use during operations, the Undergrounded Gen-Tie alternative would have less than significant impacts related to generation of GHG emissions and would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions.

Hazards and Hazardous Materials

The Undergrounded Gen-Tie alternative would include an equivalent number of solar panels, battery enclosures, and associated infrastructure as the proposed Project. The NPDES Construction General Permit and other existing regulatory requirements would be implemented for this alternative, and impacts would be less than significant and similar to the proposed Project.

Hydrology and Water Quality

The Undergrounded Gen-Tie alternative would disturb more land than the proposed Project, resulting in greater potential for water use, runoff, and impacts to hydrology and water quality compared to the proposed Project. However, the NPDES Construction General Permit and other existing regulatory requirements would still apply to this alternative, and impacts would be less than significant. Water needs during construction and decommissioning would be greater than the proposed Project, but impacts to groundwater supplies would still be less than significant.

Land Use and Planning

The Undergrounded Gen-Tie alternative would include more ground disturbance but would not divide an established community or impact land use policies or regulations. Impacts to land use would be similar to the proposed Project and would be less than significant.

Mineral Resources

The Undergrounded Gen-Tie alternative would 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 Undergrounded Gen-Tie alternative would have greater construction noise compared to the proposed Project due to additional heavy equipment needed to excavate and bury the gen-tie line along a 4-mile-long corridor. Implementation of mitigation measure NOISE-1 would mitigate construction-related noise and impacts to less than significant**.** Operational noise would be the same as the proposed Project.

Population and Housing

The Undergrounded Gen-Tie alternative would require a similar workforce and duration of construction as the proposed Project, and is not expected to substantially affect population growth or housing demands in the County. The Undergrounded Gen-Tie alternative is not expected to induce population growth directly or indirectly and would have a less than significant impact to population and housing, similar to the Project. Like the Project, the Undergrounded Gen-Tie alternative would be located on agricultural land and would not displace people or existing housing.

Public Services

The Undergrounded Gen-Tie alternative would not result in an increase in population or the associated increase in demand on emergency services, police, schools, parks, and other public services. Impacts to public services would be similar to the impacts of the proposed 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 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

While the Undergrounded Gen-Tie alternative would disturb additional area to bury the gen-tie, the worker trips would be the same as the proposed Project, such that impacts to transportation would be similar to the proposed Project. Through the implementation of mitigation measure **TRANS-1**, impacts that may occur would be reduced to less than significant.

Tribal Cultural Resources

The Undergrounded Gen-Tie alternative would include greater ground disturbance to excavate a 4-mile-long corridor to bury the gen-tie line, resulting in the greater potential to encounter tribal

cultural resources than with the proposed Project. Implementation of mitigation measures **CUL-1** through **CUL-3** would mitigate impacts to less than significant; though they would be greater compared to the proposed Project.

Utilities

The Undergrounded Gen-Tie alternative would have a greater water demand during construction, and decommissioning than the proposed Project. However, it would generate similar sanitary and solid waste as the proposed Project. Similar to the proposed Project, the Undergrounded Gen-Tie alternative would have less than significant impacts to utilities.

Wildfire

The Undergrounded Gen-Tie alternative would reduce potential ignition sources by burying the gen-tie line underground. On-site ignition sources would remain the same as the proposed Project. A Wildland Fire Management Plan would be developed as part of implementation of mitigation measure **FIRE-1**, such that wildfire impacts would be mitigated to less than significant.

Conclusion and Relationship to Project Objectives

Standard industry practices favor overhead lines due to their lower costs, ease of maintenance, and faster installation timelines, all of which are critical for adhering to project schedules, minimizing upfront costs, and avoiding costly delays. An underground transmission line can cost between 2.5 and 10 times more than an equivalent overhead transmission line (SCE 2024) meaning that a conservative estimate would be that constructing the gen-tie in the Underground Gen-tie Alternative would likely cost at least five times more to construct than the overhead gen-tie line considered by the Project. Other estimates place the cost for constructing new overhead transmission ranging from $1 million to $11 million per mile while the cost to convert existing overhead transmission to underground is between $6 million to $100 million per mile (CPUC, 2019). Under the Underground Gen-tie alternative, construction schedule would take longer, which would negatively impact the Project's ability to come online, but also to meet deliverability and resource adequacy targets as well as contribute to California's RPS goals as outlined in Objective 2. Underground lines are more challenging and costly to maintain and repair. The complexities surrounding such repairs may involve lengthy repair processes that would directly result in financial losses for the Project, further reducing the economic feasibility of this alternative.

Based on the analysis above, the Underground Gen-tie alternative is economically infeasible and therefore would not accomplish Project Objectives 1, 4, and 6, as it would require significantly greater capital expenditures than those required by the Project. Furthermore, even though the Underground Gen-tie alternative would result in less of an impact to Wildfire, it would substantially increase the amount of ground disturbance due to excavating, trenching, and backfilling and therefore would result in greater impacts to Air Quality, Biological Resources, Cultural Resources, Energy, Geology, Soils, and Paleontology, Hydrology and Water Quality, Noise, Tribal Cultural Resources, and Utilities, making it a less favorable alternative to the Project.

5.7 NORTHEAST SITE

The Northeast Site alternative would relocate the Project to the Northeast Site, which consists of 15 contiguous parcels totaling approximately 917 acres (approximately 31 acres larger than the Project site) 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 5-1. It is anticipated that a larger amount of acreage would be used for solar, BESS, and ancillary facilities compared to the proposed Project's 666 acres due to environmental constraints. For example, the Northeast Site Alternative would likely require set-aside areas for giant garter snake (*Thamnophis gigas*) and the 100-year floodplain along the existing agricultural canals such that 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, additionally, a significant decrease in capacity compared to the proposed Project's 80 MW. The Northeast Site alternative was selected for analysis because of past diligence undertaken when reviewing potential sites. It should be noted that the Applicant does not have the Northeast Site under site control and there is no certainty that it could do so.

5.7.1 Impact Analysis

Aesthetics

The Northeast Site alternative is approximately 31 acres larger than the Project site, and it is anticipated that the solar, BESS, and ancillary facilities would require a larger acreage compared to the proposed Project to generate a similar amount of electricity. The Northeast Site alternative is within 0.4 miles of the urbanized community of Williams, and adjacent to local roadways, and I-5, potentially increasing its visibility, compared to the proposed Project. Aesthetic impacts of the Northeast Site alternative site would be greater than the aesthetic impacts of the Project.

Agriculture/Forestry

Use of this alternative site would require prime agricultural land be taken out of production to allow for power generation and storage, such that the impact due to conversion of farmland would be significant and greater than the Project.

Air Quality

The Northeast Site alternative site size is approximately 31 acres larger than the Project site, and it is anticipated that a greater amount of acreage would be required for the solar, BESS, and associated facilities. The ground disturbance area, number of vehicles, and heavy equipment used would therefore be greater than the Project. However, air quality impacts would be mitigated to less than significant.

Biological Resources

The potential for impacts to biological resources resulting from development of the Northeast Site alternative would be potentially more significant than those of the Project. The same special status species that could potentially occur on the Project site could also potentially occur on the alternative site. Given that ground disturbance would be greater than the proposed Project and the rice fields within the Northeast Site alternative include potential habitat for the giant garter

snake (*Thamnophis gigas*) (Stantec 2018), a federal and state threatened species, impacts to biological resources would be greater than the proposed Project.

Cultural Resources

The Northeast Site alternative site size is approximately 31 acres larger than the Project site, and it is anticipated that more acreage would be required for the solar, BESS, and associated facilities. Potential impacts to cultural resources during ground disturbance during construction would be greater than 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-3** would be required to reduce the potential impacts due to inadvertent discoveries. Impacts would be greater than the Project.

Energy

Under the Northeast Site alternative, solar project-related development would require more acres than the Project such that surface disturbance, construction, and decommissioning activities would potentially require more fuel resources than the Project. Overall, the Northeast Site alternative would result in less than 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 require more acres compared to the proposed Project. As a result, the Northeast Site alternative would result in more surface disturbance and, therefore, potentially more significant 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 paleontological resources, the potential impacts related to geology, soils, and paleontological resources would be less than significant and greater than the Project.

Greenhouse Gas Emissions

Under the Northeast Site alternative, the solar project-related development would occur on a larger acreage as the Project. Compared to the Project, the Northeast Site alternative would result in a larger surface disturbance and, therefore, potentially larger construction and decommissioning activities and related emissions compared to 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 require a larger amount of ground disturbance, and a larger number of solar panels, even though it would require a similar quantity of 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 a similar use of hazardous materials.

Hydrology and Water Quality

Under the Northeast Site alternative, development would occur on approximately a larger acreage than the proposed Project and would result in a larger 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 and battery storage facilities on prime agricultural land which would require a larger acreage to achieve the same output capacity as the proposed Project. The site is zoned Exclusive Agricultura (E-A) and Highway Service Commercial (H-C) on which the Project could be permitted with a Use Permit, similar to the Project. This alternative would also not physically divide an established community and would not conflict with any applicable land use plan, similar to the Project.

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 located on a larger area and would require greater ground disturbance than the Project. It is also much closer to the urbanized community of Williams and, depending on the location of the project substation and BESS, its impacts on noise sensitive receptors could be 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 may require a larger workforce and duration of construction for construction and decommissioning and operations due to the large acreage required to support the solar and BESS. However, 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 in no impact relating to the displacement of people or existing housing.

Public Services

The Northeast Site alternative would result in an approximately equivalent demand for fire and emergency services, police, schools, parks, and other public services as the Project. The alternative would not result in an increase in population or the associated increase in demand on emergency services, police, schools, parks, and other public services with implementation of mitigation measure **FIRE-1**. Impacts to public services would be less than significant with mitigation and similar to the impacts of the proposed Project.

Recreation

The Northeast Site alternative may require a larger workforce; however, it is not anticipated to increase demand for 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

A larger workforce and potentially larger 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, so traffic impacts may be greater than or equivalent to the Project.

Tribal Cultural Resources

The Northeast Site alternative site is approximately 31 acres larger than the Project site and it is anticipated that more acreage would be required to generate and store the same amount of electricity due to environmental constraints. 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-3** would be required to reduce potential impacts due to inadvertent discoveries. Impacts would likely be greater than those associated with the Project.

Utilities

The Northeast Site alternative would entail a larger surface disturbance and thus require more water to manage construction dust, and potentially generate more sanitary and solid waste than the Project. There would be no conflict with solid waste reduction statutes or regulations. The Northeast Site alternative would, therefore, have more impacts related to Utilities as the Project.

Wildfire

The Northeast Site alternative would require more acres compared to the proposed Project. As a result, there would be the greater 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. A Wildlands Fire Management Plan would be implemented in accordance with mitigation measure **FIRE-1**. The impacts of the Northeast Site alternative to Wildfire would be less than significant with mitigation and the same as the Project.

Conclusion and Relationship to Project Objectives

The Northeast Site alternative would disturb a larger amount of acreage compared to the proposed Project. Therefore, impacts associated with ground disturbance would be greater to those of the proposed Project. Impacts to agriculture would be significant and greater than the proposed Project, due to the Northeast Site's occurrence on prime farmland. Biological impacts would also be expected to increase due to the presence of potential habitat for the giant garter snake (*Thamnophis gigas*), a federal and state threatened species in addition to the special status species that would be anticipated to be on both the Project site and this alternative site. The Northeast Site alternatives would increase environmental impacts and would not be as economically viable (Objective 4) as the Project. It would not develop a solar PV power generation and BESS facility in proximity to established electrical infrastructure (Objective 5) and would require the gen-tie line cross State Highway 20. While the Northeast Site alternative would achieve most of the objectives of the proposed Project, the impacts related to developing the Northeast Site alternative would be increased compared to the Project.

5.8 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. A comparison of alternatives is presented in Table 5-1 and a summary of how each alternative achieves the Project objectives is presented in Table 5-2 below. No Project alternative is considered the environmentally superior alternative for CEQA purposes because it would not create any of the localized impacts related to the Project, even though it would also have less beneficial impacts than the Project with respect to 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 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 and could identify another alternative as preferred and environmentally superior.

Table 5-1. Alternatives Comparison

Resource Area	Proposed Project	No Project	Distributed Solar	Solar Only	Underground Gen-Tie	Northeast Site
Aesthetics	Impacts less than significant	-	-	=	-	+
Agriculture/ Forestry	Impacts less than significant.	-	-	=	=	+
Air Quality	Impacts less than significant with mitigation incorporated.	-	-	=	+	+
Biological Resources	Impacts less than significant with mitigation incorporated.	-	-	=/-	+	+
Cultural Resources	Impacts less than significant with mitigation incorporated.	-	=/-	=/-	+	+
Energy	Impacts less than significant.	-	+	=/+	+	=
Geology, Soils, Paleontology	Impacts less than significant with mitigation incorporated.	-	-	=	+	+
Greenhouse Gas Emissions	Impacts less than significant.	-	=/+	=	=	=
Hazards and Hazardous Materials	Impacts less than significant.	-	-	-	=	=
Hydrology and Water Quality	Impacts less than significant.	-	-	=	+	=
Land Use and Planning	No impacts.	-	=	=	=	=
Mineral Resources	No impacts.	=	=	=	=	=
Noise	Impacts less than significant with mitigation incorporated.	-	=/-	=/-	=/+	=/+
Population and Housing	Impacts less than significant.	-	=	=	=	=
Public Services	Impacts less than significant with mitigation incorporated.	-	=	=	=	=
Recreation	No impacts.	-	=	=	=	=
Transportation	Impacts less than significant with mitigation incorporated.	-	=/-	=	=	=/+
Tribal Cultural Resources	Impacts less than significant with mitigation incorporated.	-	-	=/-	+	+

Resource Area	Proposed Project	No Project	Distributed Solar	Solar Only	Underground Gen-Tie	Northeast Site
Utilities	Impacts less than significant.	-	-	=	+	+
Wildfire	Impacts less than significant with mitigation incorporated.	-	-	-	-	=

"-" = less impacts than the proposed Project
"+" = greater impacts than the proposed Project
"=" = similar impacts to the proposed Project

Table 5-2. Alternatives and Objectives

Project Objective	Proposed Project	No Project	Distributed Solar	Solar Only	Underground Gen-tie	Northeast Site
1. Establish a solar PV power generation and BESS facility, including supporting infrastructure, of a sufficient size and configuration to produce up to 80 MW_{AC} of electricity at the POI in a cost-competitive manner	Y	N	N	N	N	Y
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.	Y	N	Y	Y	Y	Y
3. Assist California utilities to meet their obligations under CPUC's Energy Storage Framework and Design Program.	Y	N	N	N	Y	Y
4. Establish an environmentally beneficial and economically viable use of the Project site in light of its limited access to water	Y	N	N	N	N	N
5. Develop a site in proximity to	Y	N	N	Y	Y	N

Project Objective	Proposed Project	No Project	Distributed Solar	Solar Only	Underground Gen-tie	Northeast Site
transmission infrastructure in order to minimize environmental impacts.						
6. Facilitate cost-effective grid integration of intermittent and variable solar PV generation and minimize line losses associated with off-site storage by co-locating a BESS with the solar PV generation facility at the Project site.	Y	N	N	N	N	Y
7. Develop a solar PV power generation and BESS 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	Y	N	N	N	Y	Y

[1]The alternative would help meet the goals of SB 100; however, in a reduced capacity compared to the proposed Project.

5.9 REFERENCES

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