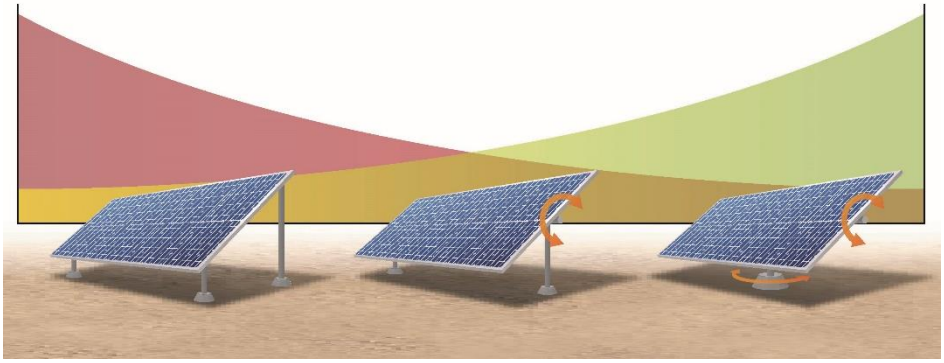
DRAFT ENVIRONMENTAL IMPACT REPORT

SLOUGHHOUSE SOLAR FACILITY



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COUNTY OF SACRAMENTO
PLANNING AND ENVIRONMENTAL REVIEW
827 7TH STREET, ROOM 225
SACRAMENTO, CALIFORNIA 95814

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This Environmental Impact Report has been prepared pursuant to the California Environmental Quality Act of 1970 (Public Resources Code Division 13). An Environmental Impact Report is an informational document which, when this Office requires its preparation shall be considered by every public agency prior to its approval or disapproval of a project. The purpose of an Environmental Impact Report is to provide public agencies with detailed information about the effect that a proposed project is likely to have on the environment; to list ways in which any adverse effects of such a project might be minimized; and to suggest alternatives to such a project.

Prepared by the
COUNTY OF SACRAMENTO
PLANNING AND ENVIRONMENTAL REVIEW
827 7TH STREET, ROOM 225
SACRAMENTO, CALIFORNIA 95814
www.PER.saccounty.net

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Acronyms and Abbreviations

°F	Fahrenheit
2018 SIP Updates	2018 Updates to the California State Implementation Plan
AB	Assembly Bill
ABBP	Avian and Bat Protection Plan
AC	alternating current
ACHP	Advisory Council on Historic Preservation
ADT	average daily traffic
AEP	annual exceedance probability
AF	acre-feet
AFY	acre-feet per year
AG-20	Agricultural homes on 20 acre parcels
AG-80	agricultural properties of 80 acres or more
AIA	Airport Influence Area
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
amsl	above mean sea level
ANSI	American National Standards Institute
APE	Area of Potential Effect
APLIC	Avian Power Line Interaction Committee
APN	Assessor Parcel Numbers
applicant	Sloughhouse Solar, LLC
ATVs	all-terrain vehicles
B.P.	Before Present
BAAQMD	Bay Area Air Quality Management District
BACT	best available control technology for toxics
Basin Plan	Water Quality Control Plan for the Sacramento-San Joaquin River Basins
BMP	Best Management Practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standard
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CALVENO	California Vehicle Noise
CAP	Climate Action Plan
CARB	California Air Resources Board
CASGEM	California Statewide Groundwater Elevation Monitoring
CASQA	California Stormwater Quality Association
CCAA	California Clean Air Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act

CEQA Guide	California Environmental Quality Act Guide to Air Quality Assessment in Sacramento County
CESA	California Endangered Species Act
CFCs	Chlorofluorocarbons
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CH_4	Methane
CHABA	Committee of Hearing, Bio Acoustics, and Bio Mechanics
CLOMR	Conditional Letters of Map Revision
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Survey
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalence
Communitywide CAP	Communitywide Greenhouse Gas Reduction and Climate Change Adaptation
County	Sacramento County
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CUP	Conditional Use Permit
CVFPB	Central Valley Flood Protection Board
CVFPP	Central Valley Flood Protection Plan
CWA	Clean Water Act
dB	decibels
dBA	A-weighted decibels
dBA/DD	A-weighted decibels per doubling of distance
DC	direct current
DOC	California Department of Conservation
DPM	diesel particulate matter
DPR	Department of Pesticide Regulation
DRAC	Design Review Advisory Committee
EFH	essential fish habitat
EIR	Environmental Impact Report
EKI	EKI Environment & Water
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
ESA	environmentally sensitive area
ESS	Electrical Energy Storage Systems
EV	electric vehicle
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FHWA-RD-77-108	Federal Highway Administration Highway Traffic Noise Prediction Model

FHZ	Flood Hazard Zone
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FR	Federal Register
FRAP	Fire and Resource Assessment Program
FTA	Federal Transit Administration
GA-80	General Agricultural (80 acres)
GDE	Groundwater Dependent Ecosystem
GHG	greenhouse gas
gpm	gallons per minute
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWP	Global Warming Potential
HAPs	hazardous air pollutants
HCFCs	Hydrochlorofluorocarbons
HCP	Habitat Conservation Plan
HFCs	Hydrofluorocarbons
HVAC	Heating Ventilation and Air Conditioning
Hz	hertz
I-5	Interstate 5
ILRP	Irrigated Lands Regulatory Program
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
KOPs	key observation points
kV	kiloVolt
LDL	Larson Davis Laboratories
L_{dn}	Day-Night Noise Level
L_{eq}	Equivalent Noise Level
LID	Low Impact Design
L_{max}	Maximum Noise Level
L_{min}	Minimum Noise Level
L_{n}	statistical descriptor
LOMR	Letters of Map Revision
LOS	level of service
LPFS	local-serving public facilities/service
LRAs	local responsibility areas
LT	long-term
LTA	Local Transportation Analyses
M&I	Municipal and Industrial
MACT	maximum available control technology for toxics
Metro Fire	Sacramento Metropolitan Fire District
MLD	most likely descendant
mm	millimeter
mph	miles per hour
MT	metric tons
MW	megawatt

N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCIC	North Central Information Center
NEC	National Electrical Code
NFPA	National Fire Protection Association
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOA	naturally occurring asbestos
NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NO_X	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPS	non-point source
NRCS	U.S. Natural Resources Conservation Service
NRHP	National Register of Historic Places
OHWM	ordinary high water mark
PFCs	Perfluorinated Chemicals
Plan	Special-status Plant Compensatory Mitigation Plan
PM	particulate matter
PM_{10}	less than 10 micrometers in diameter
$PM_{2.5}$	particulate matter less than 2.5 micrometers in diameter
PMAs	Projects and Management Actions
POI	Point of interconnection
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PPU	Preserve Planning Unit
PPV	peak particle velocity
PRC	Public Resources Code
PUC	Public Utilities Code
PV	photovoltaic
RMS	root mean square
ROG	reactive organic gases
RPS	Renewables Portfolio Standard
RWD	Reports of Waste Discharge
SACOG	Sacramento County Association of Governments
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
Scoping Plan	Climate Change Scoping Plan
SENL	Single-Event [Impulsive] Noise Level
SF_6	Sulfur hexafluoride
SFNA	Sacramento Federal Nonattainment Area
SGMA	Sustainable Groundwater Management Act
SIP	state implementation plan
Small MS4s	Small Municipal Separate Storm Sewer Systems
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District

SO_2	sulfur dioxide
SO_X	oxides of sulfur
SR	State Route
SRAs	state responsibility areas
SSHCP	South Sacramento Habitat Conservation Plan
ST	short-term
State SIP Strategy	2016 State Strategy for the State Implementation Plan
SVAB	Sacramento Valley Air Basin
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCPs	Traditional Cultural Properties
TCRs	tribal cultural resources
TIPG	Transportation Improvement and Program Guide
TMDLs	Total Maximum Daily Loads
U.S.	United States
U.S. Soil Conservation Service	Now called the Natural Resources Conservation Service
U.S.C.	U.S. Code
UAIC	United Auburn Indian Community
UCMP	University of California, Berkeley Museum of Paleontology
UDA	Urban Development Area
UPA	Urban Policy Area
USACE	United States Army Corps of Engineers
USB	Urban Services Boundary
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geographic Survey
VdB	vibration decibels
VMT	vehicle miles travelled
VOC	volatile organic compounds
WDRs	Waste Discharge Requirements
WEAP	Worker Awareness Environmental Program
WSA	Water Supply Assessment
YSAQMD	Yolo-Solano Air Quality Management District
µin/sec	microinch per second

1 EXECUTIVE SUMMARY

This environmental impact report (EIR) describes the potential environmental impacts of developing the Sloughhouse Solar Project (proposed project). The purpose of an EIR is to evaluate a project's effects on environmental resources, both singularly and in a cumulative context, to examine alternatives to the project as proposed, and identify mitigation measures to reduce or avoid potentially significant effects.

Sacramento County (County) is the lead agency under CEQA. This document has been prepared in compliance with the California Environmental Quality Act (CEQA; Sections 21000-21189 of the Public Resources Code [PRC]) and the State CEQA Guidelines (Title 14, Sections 15000-15387 of the California Code of Regulations).

PROPOSED PROJECT SUMMARY

PROPOSED PROJECT

Sloughhouse Solar, LLC (applicant) is proposing to construct, operate, and decommission a new 50-megawatt (MW) solar energy facility on an approximately 380-acre project site in the Cosumnes community of unincorporated Sacramento County. The project site is generally located south of Jackson Highway, southeast of the Cosumnes River, west of Dillard Road, and south of Meiss Road in the Cosumnes community (Supervisor District 5). More specifically, the proposed project site is located southwest of the intersection of Meiss Road and Dillard Road, adjacent to an existing solar energy facility at 7794 Dillard Road.

Approval of the proposed project would result in the construction, operation, and eventual decommissioning of solar-energy generation, energy storage, and electrical distribution facilities. The project parcels would be developed with solar panel arrays and ancillary facilities, energy storage facilities, an electrical substation, internal roads, retention basins, and distribution lines connecting to the regional power grid. The project site is located on agricultural grazing lands and is adjacent to an existing solar energy facility. The electrical power provided by the project would be supplied to the Sacramento Municipal Utility District (SMUD) using existing, adjacent SMUD distribution facilities, located within the east side of the Dillard Road right-of-way.

Project construction would take approximately eight months. At the end of the project's useful life (anticipated to be 35 years), the site would be decommissioned, per Sacramento County requirements.

For additional project details, see Chapter 2, "Project Description."

SUMMARY OF ALTERNATIVES

The following summary provides brief descriptions of the alternatives. For a more thorough discussion of project alternatives, see Chapter 14, "Alternatives."

NO PROJECT ALTERNATIVE

As described in Chapter 14, "Alternatives", of the Draft EIR, CEQA requires an evaluation of a No Project alternative be completed so that decision makers can compare the impacts of approving the project with the impacts of not approving the project. Under the No Project alternative, the project would not be constructed on the project site, and as a result, none of the associated impacts would occur and none of the permits or approvals that would be required for the project would be needed. Therefore, for the purposes of the No Project alternative analysis, the applicant would not execute their lease option on the parcels comprising the proposed project site and the project would not be constructed. Existing conditions would likely remain unchanged (i.e., property would remain as agricultural land) and agricultural activities would likely continue. This alternative would not meet any of the objectives identified in Chapter 14, "Attainment of Project Objectives" section.

ALTERNATIVE 1: MODIFIED PROJECT FOOTPRINT

As described in Chapter 14, "Alternatives", of the Draft EIR, a Modified Project Footprint Alternative (Alternative 1) was developed to address comments received during the 30-day NOP scoping period, and consultation with trustee and responsible agencies. Alternative 1 includes design and engineering techniques to reduce impacts to sensitive biological resources including aquatic resources, reduced landform modifications and grading (and associated air pollutant emissions), and reducing water demand during construction. The Alternative 1 project design was focused on minimizing impacts to environmental resources within the 372-acre Alternative 1 site while meeting the project objectives.

Alternative 1 is a proposed approximately 50 MW solar photovoltaic energy-generating facility located on the southwest corner of Meiss Road and Dillard Road, adjacent to an existing solar energy facility located at 7794 Dillard Road, Sacramento County, California. Like the proposed project, Alternative 1 would be developed by the applicant to sell electricity and all renewable and environmental attributes to an electric utility purchaser under long-term contracts to help meet California Renewables Portfolio Standard goals.

ORGANIZATION OF THE DRAFT ENVIRONMENTAL IMPACT REPORT

In accordance with CEQA, lead agencies must prepare an EIR to evaluate the potential consequences of development and operation of projects that could significantly affect the environment. The EIR process is specifically designed to objectively evaluate and disclose potentially significant direct, indirect, and cumulative impacts of a project; to identify alternatives that reduce or eliminate a project's significant effects; and to identify

feasible measures that mitigate significant environmental effects. In addition, CEQA requires that an EIR identify those adverse impacts that remain significant after mitigation. The purpose of an EIR is not to recommend approval or denial of a project, but to provide decision-makers, public agencies, and the general public with information about the project.

The remainder of this document includes a detailed description of the proposed project, analysis of potential environmental impacts that could result from project implementation, discussion of cumulative and growth-inducing impacts, and evaluation of potential alternatives to the proposed project. This information is organized as detailed below:

- **Chapter 2, Project Description.** Describes the location of the proposed project, project background, existing conditions on-site, and the nature and location of specific elements of the proposed project.
- **Chapters 3-13, Environmental Analysis by Resource Topic.** Includes a topic-by-topic analysis of impacts that would or could result from the proposed project implementation. Each chapter includes a discussion of the environmental and regulatory setting, impact analysis, and mitigation measures.
- **Chapter 14, Alternatives.** Describes feasible alternatives to the proposed project, including the No Project alternative, describes the environmental impacts related to each alternative, and discusses alternatives that were considered but ultimately rejected for further analysis.
- **Chapter 15, Summary of Impacts and Their Disposition.** Includes a summary of the environmental findings in the Draft EIR, includes a discussion of effects found not be significant, and includes a discussion of cumulative impacts.
- **Chapter 16, Bibliography.** Lists all resources used to prepare the draft EIR.
- **Appendices.** The appendices contain several reference items providing support and documentation of the analyses performed for this report.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

The following environmental impact and mitigation summary table (Table ES-1) briefly describes the project impacts and the mitigation measures recommended to eliminate or reduce the impacts. The residual impact after mitigation is also identified. Detailed discussions of each of the identified impacts and mitigation measures, including pertinent support data, can be found in the specific topic sections in the remainder of this report.

Table ES-1: Executive Summary of Impacts and Mitigation

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Chapter 3, Aesthetics			
Impact AE-1: Substantially Degrade the Existing Visual Character or Quality of the Project Site	PS	*AE-1 Prepare and Implement a Landscape Screening and Irrigation Plan that Will be Monitored for Long-term Success.* Prior to the issuance of permits for grading, buildings, or improvement plans, the project applicant shall do the following: • Engage the services of a licensed California landscape architect to prepare a Landscape Screening and Irrigation Plan. The plan shall specify the number, species, and sizes of plants to be used, along with any specific planting instructions for the landscape contractor. The full height of plants at maturity shall be specified in the plan to demonstrate that effective screening of proposed facilities from Meiss Road and Dillard Road will be accomplished. The plan shall include an irrigation plan that specifies the types and locations of irrigation to be used, and the time necessary for plants to become established. To the extent feasible, California native plants shall be used for screening. Plants that require minimal or no supplemental summer water at maturity shall be given preference over non-native plants. The plant species shall be selected to blend (in visual appearance) with existing species in the surrounding area. The primary screening shall be provided by evergreen species to ensure year-round visual screening; deciduous species may be used as accents for spring or summer flowers and fall colors. • The applicant shall maintain the landscape screening in a condition that effectively screens of proposed facilities from Meiss Road and Dillard Road throughout the project's 35-year lifespan. The applicant shall monitor the success of the Landscape Screening and Irrigation Plan for seven years after landscape screening has been installed and provide a monitoring report to Sacramento County Planning and Environmental Review annually. Any failures of the irrigation system or landscape screening plants shall be corrected or replaced in a timely manner. If supplemental watering is required	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		to support the landscape screening throughout the project's 35-year lifespan, the applicant shall provide it. • The Landscape Screening and Irrigation Plan shall contain all elements required by Sacramento County Zoning Code Section 3.3.6.C.3.f. • The Landscape Screening and Irrigation Plan shall be provided to Sacramento County for review and approval as part of the project's design review package.	
Impact AE-2: Create Substantial New Sources of Light and Glare	PS	*AE-2. Prepare a Construction Lighting Plan.* The project applicant shall require its construction contractor to prepare a nighttime construction lighting plan that includes implementation of the following measures: Where construction areas are 500 feet or closer to Meiss Road, Dillard Road, or private residences, the construction contractor shall erect a temporary 6-foot-tall solid-screened fence at the edge of the construction area, between the work area and the residence/roadway. 1. All nighttime construction lighting, regardless of location within the project site, shall be shielded and recessed within each fixture so as to direct light downwards and focused on the area to be illuminated. 2. All work zone illumination shall use the minimum foot-candles necessary to safely perform the required work. 3. Any lighting systems with flood, spot, or stadium-type luminaires shall be aimed downward at the work area and rotated outward no greater than 30 degrees from straight down.	LTSM
Chapter 4, Agricultural Resources and Land Use			
Impact AL-1: Conversion of Agricultural Land to Non-Agricultural Use	PS	*AL-1. Implement the Agricultural Management Plan* Prior to issuance of a Building Permit, the project applicant shall submit the draft Agricultural Management Plan to Sacramento County Planning and Environmental Review for review and approval. The Agricultural Management Plan shall be implemented	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		throughout the operational life of the project and specify the following conditions to ensure ongoing use of the project site for grazing. **Site Preparation/Soil Treatment** After completion of construction activities, all construction materials, trash, and debris shall be removed from areas of the project site that are to be seeded. Any eroded areas shall be repaired uniformly without leaving pits, holes, or low areas. Soil preparation (decompaction, tillage, seeding) activities shall be conducted when soil conditions are dry or only slightly moist. Soil preparation shall not be undertaken if soils are so moist that traffic or tillage would lead to mold or smearing. Because it is not possible to predict the exact construction schedule, two different approaches may be used for soil preparation: • Dry Season Construction: If construction activities are completed in fall, soil preparation activities shall be implemented to provide the best opportunity for seeding to be completed by October 15. Soil preparation activities may be conducted later in fall provided dry or only slightly moist soil conditions persist. • Wet Season Construction: If construction activities are completed in winter when soil conditions are too wet to allow for effective soil manipulation, soil preparation activities would be postponed until the following late summer or fall, as described above under Dry Season Construction. Under this scenario, it may be necessary to apply an herbicide treatment in late spring/early summer to minimize the spread of invasive species. Prior to seeding, any areas intended for revegetation that were compacted by construction activities shall be decompacted to not more than 12 inches depth on not less than 18-inch centers, such that clods remain and soil is not pulverized. Soil shall be left in a roughened condition if construction is completed in spring or early summer and several months remain until seeding. Before seeding, a disk and/or ring roller shall be used to reduce the soil surface to a suitable planting medium with a firm but not compacted surface and clods reduced to less than 1 inch. If organic soil amendments	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		are used, compost shall be obtained from a producer fully permitted as specified under the California Integrated Waste Management Board, Local Enforcement Agencies and any other State and Local Agencies that regulate Solid Waste Facilities. **Seeding Plan** Final site-specific seeding plans shall be developed based on assessment of the following factors: (1) soil conditions; (2) appropriate grassland species; and (3) dietary preferences of the animals identified to graze on-site. These seeding plans shall be designed to be self-perpetuating; that is, the vegetation is intended to re-seed naturally. The site shall be seeded using seed drills or broadcast seeding followed by light raking. Hydroseeding and hydromulching may also be used depending on the timing and site-specific conditions. Seeding shall be completed prior to October 15. **Grazing Plan** The project applicant shall enter into agreements with a grazing entity and/or habitat management contractors to manage the forage resources. Grazing and forage utilization shall be managed so that erosion and nutrient losses are minimized and so that overgrazing does not occur. These guidelines are designed to provide for sustainable forage production and to protect soil resources and water quality. Grazing is likely to start between March 1 and April 30 with the timing dependent on weather and foraging conditions. During the grazing period, grass shall be maintained at a height of approximately 12 inches and optimally 4–8 inches. The grazing entity and/or habitat manager shall also complete regular inspections for invasive weed populations to maintain a native grassland within the fenced solar array. As required by Mitigation Measure WF-1 (in Chapter 13, “Wildfire”), after the grazing period, the applicant shall keep grasses and weeds on the undeveloped upland portion of the project site to a height of six inches or less, and throughout the dry season months, between May and November, to manage grass height and	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		fuel load on-site. To control the weed height, mowing may be required. As required by Mitigation Measure BR-3 (in Chapter 6, "Biological Resources"), grazing and mowing shall not occur within the established wetland avoidance buffers. As required by Mitigation Measures BR-1a through BR-1l, grazing and mowing activities shall avoid sensitive habitats, as applicable. **Monitoring Plan** Annual reports shall be prepared by the project applicant for the first five years of the project's operation and then every three years afterwards for the life of the project. The annual reports and triennial reports shall be submitted to Sacramento County Planning and Environmental Review, and Sacramento County Agricultural Commissioner. These reports shall include at a minimum: • The name, title, and company of all persons involved in grazing contracts and report preparation. • Documentation of grazing timing and locations, equipment, and water use. • Maps or aerials showing clipping and photo documentation locations. • An assessment of agricultural productivity and the contribution of grazing efforts to achieve native grassland ground cover that is utilized by biological resources native to the project area.	
Impact AL-2: Changes in the Existing Environment that Could Indirectly Result in Conversion of Farmland to Non-agricultural Use	LTS	No mitigation is required.	LTS
Impact AL-3: Consistency with Plans, Policies, and Regulations	LTS	No mitigation is required.	LTS

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Chapter 5, Air Quality			
Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan	PS	Implement Mitigation Measures AQ-2a, AQ-2b, AQ-2c, AQ-2d, AQ-2e, and AQ-2f.	LTSM
Impact AQ-2: 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	PS	*AQ-2a. Implement Basic Construction Emission Control Practices (Best Management Practices) and Enhanced Fugitive PM Dust Control Practices during Construction and Decommissioning.* • The applicant shall include as a condition of the construction and decommissioning bidding, incorporation of dust control measures that shall include, at a minimum, the requirements of SMAQMD Rule 403. All fugitive dust control measures shall be shown on grading, improvement, and demolition plans, to be initiated at the start and maintained throughout the duration of construction and decommissioning. • Water all exposed active work areas two times daily, or with adequate frequency for continued moist soil. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads. However, do not overwater to the extent that sediment flows off the site. • Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered. • Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited. • Limit vehicle speeds on unpaved roads to 15 miles per hour (mph). • Suspend excavation, grading, and/or demolition activity when average wind speeds exceed 20 mph. • All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		pads should be laid as soon as possible after grading unless seeding or soil binders are used. • Install wheel washers, rattle plates and/or rock aprons for all exiting trucks or equipment leaving the site. • Treat site accesses from the paved road with a 6 to 12- inch layer of gravel to reduce generation of road dust and road dust carryout onto public roads. • Post a publicly visible sign with the telephone number and person to contact at the County of Sacramento regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of the SMAQMD shall also be visible to ensure compliance. • Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site. • Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2449 and 2449.1]. For more information contact CARB at 877-593-6677, doors@arb.ca.gov, or www.arb.ca.gov/doors/compliance_cert1.html. • Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.	
	PS	*AQ-2b. Reduce Construction Equipment Exhaust-Related Emissions during Construction.* The applicant shall require off-road diesel-fueled equipment with engines larger than 50 horsepower have engines that meet or exceed EPA/CARB Tier 4 Final emissions standards. An exemption from these requirements may be granted by the County if the County documents that equipment with the required tier is not reasonably available and corresponding reductions in criteria	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		air pollutant emissions are achieved from other construction equipment (see completion of the Construction Emissions Control Plan in Mitigation Measure AQ-2d below). Before an exemption may be considered by the County, the applicant shall be required to demonstrate that two construction fleet owners/operators in Sacramento County were contacted and that those owners/operators confirmed Tier 4 equipment could not be located within Sacramento County.	
	PS	*AQ-2c. Reduce Haul Truck Trip Exhaust-Related Emissions during Construction.* The applicant shall require the use of 2010 or newer diesel-powered heavy-duty trucks during construction of the project. An exemption from these requirements may be granted by the County if the County documents that trucks with the required model year engine are not reasonably available and corresponding reductions in criteria air pollutant emissions are achieved from other construction equipment (see completion of the Construction Emissions Control Plan below). Before an exemption may be considered by the County, the applicant shall be required to demonstrate that two construction fleet owners/operators in Sacramento County were contacted and that those owners/operators confirmed 2010 or newer trucks could not be located within Sacramento County.	LTSM
	PS	*AQ-2d. Submit a Construction Emissions Control Plan.* Prior to the approval of grading plans, the construction contractor shall submit a Construction Emissions Control Plan to the SMAQMD and provide written evidence to the County of Sacramento that the plan has been submitted to and approved by SMAQMD. The applicant shall not initiate any on-site or off-site construction activity until SMAQMD has approved the Construction Emissions Control Plan. The Construction Emissions Control Plan shall include the following:	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• The contractor shall submit to the SMAQMD a comprehensive equipment inventory (e.g., make, model, year, emission (tier) rating, projected hours of use, and CARB equipment identification number) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used. If any new equipment is added after submission of the inventory, the contractor shall notify the SMAQMD before the new equipment being utilized. At least three business days before the use of subject heavy-duty off-road equipment, the project representative shall provide the SMAQMD with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and on-site foreman. • The contractor shall submit to the SMAQMD an anticipated off-site heavy-duty truck trip activity schedule (duration of truck trip activity, anticipated origin/destination of truck trips, and estimated total and daily truck trips per day) and anticipated truck fleet inventory (e.g., make, model, engine year). • With submittal of the equipment inventory and anticipated on-road heavy-duty truck trip activity, the contractor shall provide a written calculation of the project's total and daily construction emissions to the SMAQMD for approval. If any new equipment or haul truck activity is added after the submission and approval of the inventory, the construction contractor shall update the inventory and construction emissions calculations and provide to the SMAQMD and County of Sacramento prior to the use of such equipment and trucks. The emissions calculations shall be calculated using the SMAQMD's Construction Mitigation Calculator; this tool is currently available on the SMAQMD's website at the following link: http://www.airquality.org/businesses/ceqa-land-use-planning/mitigation.	
	PS	*AQ-2e. Off-site Construction Mitigation.* • If, based upon the incorporation of all measures described above in Mitigation Measures AQ-2a through AQ-2d, NO_X or PM_{10}	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		emissions still do not meet the daily SMAQMD thresholds, the project shall participate in the SMAQMD's Offsite Mitigation Program by paying to SMAQMD a mitigation fee for construction activities, to be determined at the time of construction based on the submitted equipment inventory and heavy-duty truck activity and emissions calculations for NO_X and PM_{10} emissions, such that emissions are reduced to a less-than-significant level. The fee calculation to mitigate daily emissions shall be based on the SMAQMD mitigation fee rate, which is reviewed and adjusted annually, if needed. The current mitigation fee rate is $30,000 per ton of emissions with a 5 percent administrative fee in addition to the mitigation fee. The total fee shall be determined based on the total emissions reductions of NO_X and PM_{10} needed to reduce emissions to be less than the SMAQMD thresholds of 85 pounds per day for NO_X and 80 pounds per day for PM_{10}. The fee shall be submitted for approval by SMAQMD as the total required to achieve emissions reductions that would reduce total emissions to a less-than-significant level after all other mitigation measures are implemented. The fee shall be calculated, approved by SMAQMD, and paid prior to the issuance of grading or improvement plans.	
	PS	*AQ-2f. Implement Best Management Practices for Reducing Operational PM Emissions* • The applicant shall include as a condition of building permit, the following best management practices for fugitive dust control during operational and maintenance activities associated with the project: • Limit vehicle speeds on unpaved roads to 15 mph. • Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site. • Compliance with anti-idling regulations for diesel powered commercial motor vehicles (greater than 10,000 gross vehicular	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		weight rating). The current requirements include limiting idling time to 5 minutes and installing technologies on the vehicles that support anti-idling. Information can be found on the California Air Resources Board's website: https://ww2.arb.ca.gov/ourwork/programs/idle-reduction-technologies/idle-reduction-technologies.	
Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations	LTS	No mitigation is required.	LTS
Impact AQ-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people	LTS	No mitigation is required.	LTS
Chapter 6, Biological Resources			
Impact BR-1: 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 CDFW or USFWS	PS	*BR-1a: Implement Construction Best Management Practices to Avoid and Minimize Potential for Construction-Related Impacts on Special-Status Plants and Wildlife.* • **BMP-1 (Construction Fencing).** Orange construction fencing, or equivalent, shall be installed to ensure that ground disturbance does not extend beyond the allowed construction footprint (i.e., the limit of project construction plus equipment staging areas, vehicle parking, materials storage, and newly-developed access roads). The fencing shall remain in place until project completion. • **BMP-2 (Erosion Control).** Before implementing ground-disturbing activities, temporary control measures for sediment, stormwater, and pollutant runoff shall be installed to protect water quality and species habitat. Silt fencing or other appropriate sediment control device(s) shall be installed downslope of any activities that disturbs soils. Fiber rolls and seed mixtures used for erosion control shall be free of viable	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		noxious weed seed. Erosion controls installed in or adjacent to modeled habitat for western pond turtle, California tiger salamander, and western spadefoot must be of appropriate design and materials that shall not entrap the species (e.g., not contain mesh netting). Regular monitoring and maintenance of the project's erosion control measures shall be conducted until project completion to ensure effective operation of erosion control measures. • **BMP-3 (Equipment Storage and Fueling).** During construction activities, equipment storage and staging shall occur only in the development footprint. Fuel storage and equipment fueling shall occur away from waterways, stream channels, stream banks, and other environmentally sensitive areas within the development footprint. If construction activities result in a spill of fuel, hydraulic fluid, lubricants, or other petroleum products, the spill shall be absorbed, and waste disposed of in a manner to prevent pollutants from entering a waterway or stream setback. • **BMP-4 (Erodible Materials).** Construction activities must not deposit erodible materials into waterways; vegetation clippings, brush, loose soils, or other debris material shall not be stockpiled within stream channels or on adjacent banks. Erodible material must be disposed of such that it cannot enter a waterway, stream setback or aquatic land cover type. If water and sludge must be pumped from a subdrain or other structure, the material shall be conveyed to a temporary settling basin to prevent sediment from entering a waterway. • **BMP-5 (Dust Control).** During ground-disturbing construction activities, active construction sites shall be watered regularly, if warranted, to avoid or minimize impacts from construction dust on adjacent vegetation and wildlife habitats. No surface water shall be used from aquatic land covers and water shall be obtained from a municipal source or existing groundwater well. • **BMP-6 (Construction Lighting).** All temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) shall be directed away from adjacent natural	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		habitats, and particularly riparian and wetland habitats and wildlife movement areas. • **BMP-7 (Biological Monitor).** A construction monitor shall be on-site during construction activities as needed, as described below in Mitigation Measure BR-1c (California Tiger Salamander and Western Spadefoot), Mitigation Measure BR-1d (Western Pond Turtle), Mitigation Measure BR-1e (Western Burrowing Owl), Mitigation Measure BR-1f (Swainson's Hawk), Mitigation Measure BR-1g (Tricolored Blackbird), Mitigation Measure BR-1h (Valley Elderberry Longhorn Beetle), Mitigation Measure BR-1k (Bats), and Mitigation Measure BR-1l (Nesting Raptors and Migratory Birds). • **BMP-8 (Training of Construction Staff).** A mandatory Worker Environmental Awareness Program (WEAP) shall be conducted by a qualified biologist for all construction workers, including contractors, prior to the commencement of construction activities. The training shall include how to identify Covered Species that might enter the construction site, relevant life history information and habitats, statutory requirements and the consequences of non-compliance, the boundaries of the construction area and permitted disturbance zones, litter control training (SPECIES-1), and appropriate protocols if a Covered Species is encountered. Supporting materials containing training information shall be prepared and distributed by the qualified biologist. When necessary, training and supporting materials shall also be provided in Spanish. Upon completion of training, construction personnel shall sign a form stating that they attended the training and understand all AMMs. • **BMP-9 (Soil Compaction).** After construction is complete, all temporarily disturbed areas shall be restored similar to pre-project conditions, including impacts relating to soil compaction, water infiltration capacity, and soil hydrologic characteristics.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• **BMP-10 (Revegetation).** Cut-and-fill slopes shall be revegetated with native or existing non-invasive, non-native plants (e.g., non-native grasses) suitable for the altered soil conditions. • **BMP-11 (Speed Limit).** Project-related vehicles shall observe the posted speed limits on paved roads and a 10-mile-per-hour speed limit on unpaved roads and during travel in project areas. Construction crews shall be given weekly tailgate instruction to travel only on designated and marked existing, cross-country, and project-only roads. • **SPECIES-1 (Litter Removal Program).** A litter control program shall be instituted for the entire project site. All workers shall ensure that their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. All garbage shall be removed from the project site at the end of each work day, and construction personnel shall not feed or otherwise attract wildlife to the area where construction activities are taking place. • **SPECIES-2 (No Pets in Construction Areas)**. To avoid harm and harassment of native species, workers and visitors shall not bring pets onto a project site.	
	PS	*BR-1b: void, Minimize, and Mitigate for Impacts on Special-Status Plants* The following measures shall be implemented to avoid, minimize, and mitigate for special-status plant species, sensitive natural communities, and protected wetlands with potential to occur in the project area. • A preconstruction protocol-level botanical survey shall be conducted within the project site for special-status plant species (Table BR-3) with potential to occur and, where access is permitted, within a 250-foot buffer of the project site. Surveys shall be conducted by a qualified botanist and in accordance with the most recent CDFW and CNPS survey guidelines, including conducting surveys during appropriate bloom periods for targeted species. All attempts shall be made to conduct this	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		survey during a year with favorable conditions (i.e., adequate rainfall). If no special-status species are observed during the preconstruction survey, then no further actions or mitigation are required. • If the preconstruction survey detects the presence of any federally-listed plant species (e.g., Sacramento Orcutt grass, slender Orcutt grass), the occurrence(s) shall be mapped and protected from project-related disturbances by implementing applicable impact avoidance measures consistent with the SSHCP (e.g., any Sacramento Orcutt grass or slender Orcutt grass occurrences shall be and avoided by a minimum of 300 feet). Coordination with USFWS and CDFW shall be required to confirm adequate protection prior to initiation of project-related ground disturbance. • If the preconstruction survey detects the presence of any non-federally listed special-status or SSHCP-covered plant species within the project site or 250-foot buffer, the occurrence(s) shall be mapped and protected from any project-related disturbance activities by implementing applicable impact avoidance measures consistent with CDFW guidelines; or if no such guidelines exist, the occurrence shall be buffered by a minimum of 250 feet through the use of environmentally sensitive area (ESA) fencing with appropriate signage. • A discussion of special-status plant species with potential to occur, sensitive natural communities, and sensitive aquatic resources shall be included in the WEAP discussed as BMP-8 under Mitigation Measure BR-1a. If significant impacts on special-status plants cannot be avoided as described above, a Special-status Plant Compensatory Mitigation Plan (Plan) shall be developed prior to project implementaiton that identifies the residual significant impacts that require compensatory mitigation and describes the compensatory mitigation strategy being implemented and how unavoidable losses of special-status plants shall be compensated to achieve no-net reduction in population size (i.e., number of occurrences).	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		The Plan would be consistent with CNPS (1998 or more current) mitigation guidelines. The project proponent shall consult with CDFW and/or any other applicable responsible agency prior to finalizing the Plan to satisfy that responsible agency's requirements. The first priority for compensatory mitigation shall be preserving and enhancing existing populations outside of the project area in perpetuity, or if that is not an option because existing populations that can be preserved in perpetuity are not available, one of the following mitigation options shall be implemented by the project proponent instead: • creating populations on mitigation sites outside of the treatment area through seed collection and dispersal (annual species) or transplantation (perennial species); • purchasing mitigation credits from a CDFW- or USFWS-approved conservation or mitigation bank in sufficient quantities to offset the loss of occupied habitat; and • if the affected special-status plants are not listed under the federal ESA or CESA, compensatory mitigation may include restoring or enhancing degraded habitats so that they are made suitable to support special-status plant species in the future. • If relocation efforts are part of the Plan, it shall include details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, success criteria, and remedial action responsibilities should the initial effort fail to meet long-term monitoring requirements. The following performance standards shall be applied for relocation: ▪ the extent of occupied area shall be substantially similar to the affected occupied habitat and shall be suitable for self-producing populations. ▪ Relocated/re-established populations shall be considered suitable for self-producing when habitat conditions allow for	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		plants to reestablish annually for a minimum of 5 years with no human intervention, such as supplemental seeding; and ▪ reestablished habitats contain an occupied area comparable to existing occupied habitat areas in similar habitat types in the region. If preservation of existing populations or creation of new populations is part of the mitigation plan, the Plan shall include a summary of the proposed compensation lands and actions (e.g., the number and type of credits, location of mitigation bank or easement, restoration or enhancement actions), parties responsible for the long-term management of the land, and the legal and funding mechanisms (e.g., holder of conservation easement or fee title). The project proponent shall submit evidence that the necessary mitigation has been implemented or that the project proponent has entered into a legal agreement to implement it and that compensatory plant populations shall be preserved in perpetuity. If mitigation includes dedication of conservation easements, purchase of mitigation credits, or other off-site conservation measures, the details of these measures shall be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, funding assurances, and success criteria such as those listed above and other details, as appropriate to target the preservation of long term viable populations. If mitigation includes restoring or enhancing habitat within the treatment area or outside of the treatment area, the Plan shall include a description of the proposed habitat improvements, success criteria that demonstrate the performance standard of maintained habitat function has been met, legal and funding mechanisms, and parties responsible for long-term management and monitoring of the restored habitat.	
	PS	*BR-1c: Avoid, Minimize, and Mitigate for Impacts on California Tiger Salamander and Western Spadefoot.* • Implement Mitigation Measure AL-1 (see Chapter 4, “Agricultural Resources and Land Use”).	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• Unless a smaller buffer is approved through formal consultation with USFWS, temporary construction fencing shall be installed a minimum of 250 feet from the delineated wetland edge of any potentially suitable aquatic habitats (e.g., vernal pools, seasonal wetlands) for California tiger salamander and western spadefoot. All construction and operations activities are prohibited within this buffer area. If avoidance of potential aquatic habitats, as described, is not feasible, project ground-disturbing activities within such areas shall be restricted to during the dry season. • Project ground-disturbing activities within suitable upland habitat for California tiger salamander and western spadefoot shall occur outside of their combined breeding and dispersal seasons (i.e., work to occur after May 15 and before October 15). If project ground-disturbing activities must be implemented during the breeding and dispersal season (October 15 to May 15), activities shall not start until 30 minutes after sunrise and must be completed 30 minutes prior to sunset. In addition, a qualified biologist shall survey the active work areas (including access roads) in mornings following measurable precipitation events. Construction may commence once the biologist has confirmed that no spadefoot or California tiger salamander are in the work area. • If project ground-disturbing activities must be implemented in potentially suitable habitat for these species, a qualified biologist experienced with California tiger salamander and western spadefoot identification and behavior shall monitor the project site. The qualified biologist shall be on-site daily while construction-related activities are taking place and shall inspect the project site for these species every morning before 7:00 a.m., or prior to construction activities. The qualified biologist shall also train construction personnel on the required species avoidance procedures, and correct protocols in the event that a California tiger salamander or western spadefoot enters an active construction zone. If one of these species is encountered, the following measure shall be implemented.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		▪ If a California tiger salamander or western spadefoot is encountered during project activities, the qualified biologist shall notify CDFW and USFWS (for California tiger salamander) immediately. Project activities shall be suspended within a 100-foot radius of the animal until the animal moves on its own volition, or is relocated by a qualified biologist with appropriate handling permits. Prior to relocation, the qualified biologist shall notify CDFW and USFWS to determine the appropriate procedures related to relocation. If the animal is handled, a report shall be submitted within one business day to CDFW and USFWS. Any worker who inadvertently injures or kills a California tiger salamander or western spadefoot or who finds any individual(s) dead, injured, or entrapped must immediately report the incident to the qualified biologist. The biologist shall report any take (i.e., injury or mortality) of listed species to USFWS and CDFW immediately. • All excavated steep-walled holes or trenches more than six inches deep shall be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes or trenches shall be inspected by the qualified biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within potential habitat shall be inspected for California tiger salamanders and western spadefoot by the qualified biologist prior to being moved. • If erosion control is necessary on the project site, non-entangling erosion control material shall be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material shall be used to ensure that sensitive amphibians are not trapped (no monofilament). Coconut coir matting and fiber rolls with burlap are examples of acceptable erosion control materials. This limitation shall be	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		communicated to the contractor through use of special provisions included in the bid solicitation package. • Rodent control shall be allowed only in and around human-occupied portions of the project site. Where rodent control is allowed, the method of rodent control shall comply with the methods of rodent control discussed in the 4(d) Rule published in the USFWS's (2004) final listing rule for tiger salamander. • This species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a. • Implement Mitigation Measure BR-3, Avoid, Minimize, and Mitigate for Impacts on State and Federally Protected Wetlands.	
	PS	*BR-1d: Avoid, Minimize, and Mitigate for Impacts on Northwestern Pond Turtle* • For any project-related activities that occur within 300 feet of suitable habitat (e.g., any adjacent riparian woodland), project ground-disturbing activities shall be conducted outside of northwestern pond turtle's active season (i.e., work to occur after May 1 and before September 15). If project activities must be implemented during the breeding and dispersal season, they shall not start until 30 minutes after sunrise and must be completed 30 minutes prior to sunset. • A qualified biologist shall conduct a preconstruction survey for northwestern pond turtle within 48 hours prior to the start of construction activities within 300 feet of suitable habitat (e.g., any adjacent riparian woodland along the Cosumnes River). Concurrently with the preconstruction survey, searches for nesting sites shall be conducted and any identified sites shall be delineated with high-visibility flagging or fencing and avoided during construction activities. If avoidance is not possible, the nest and/or turtle shall be removed and relocated to an appropriate location by a qualified biologist with appropriate permits. • If turtles and/or nests are encountered during the preconstruction survey, a qualified biologist shall be present during grubbing and	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		clearing activities in suitable habitat to monitor for northwestern pond turtle. If a turtle is observed in the active construction zone, construction shall be suspended within a 100-foot buffer, and a qualified biologist shall be notified. Construction may resume when the biologist has either hand-captured and relocated the turtle to nearby suitable habitat outside the construction zone, or, after thorough inspection, determined that the turtle has moved away from the construction zone. • Implement BMP-11 (Speed Limits), included in Mitigation Measure BR-1a. • This species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.	
	PS	*BR-1e: Avoid, Minimize, and Mitigate for Impacts on Western Burrowing Owl and Occupied Nesting Habitat* • Implement Mitigation Measure AL-1 (see Chapter 4, "Agricultural Resources and Land Use"). • A qualified biologist shall conduct a preconstruction survey for burrowing owl no more than 30 days prior to ground-disturbing activities to provide updated information on owl locations and occupied burrows for impact avoidance, minimization, and mitigation planning. The survey shall cover the limits of ground disturbance and potentially suitable habitat within 500 feet. The survey shall be consistent with CDFG (2012), or more current CDFW guidelines. If ground-disturbing activities are delayed, then additional surveys shall be conducted such that no more than 7 days elapse between the survey and ground-disturbing activities. • A Burrowing Owl Mitigation and Management Plan shall be developed in consultation with CDFW and consistent with CDFG's *Staff Report on Burrowing Owl Mitigation* (March 2012), or more current CDFW guidelines prior to project construction. The CDFW-approved Burrowing Owl Mitigation and Management Plan shall be submitted to the County of Sacramento for review prior to the start of construction. The plan	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		shall address long-term ecological sustainability and maintenance of the site for burrowing owls on the project site and in adjacent areas. The Plan shall require the applicant to achieve a performance standard of no net loss of burrowing owl nesting and foraging habitat acreage, function, and values and shall include the following elements: • A description of the preconstruction distribution and abundance of burrowing owls and existing habitat conditions at the project site. ▪ Avoidance and minimization measures to be implemented during project construction to avoid direct and indirect impacts on burrowing owls (e.g., establishment of a minimum of 50 meters, up to 500 meters, non-disturbance buffers around active burrows depending on the time of year and type of activity, consistent with CDFW's 2012 Staff Report guidelines), including a discussion of any proposed passive relocation activities, if necessary (e.g., non-breeding season active burrows that cannot feasibly be avoided). ▪ Proposed management of burrowing owl nesting and foraging habitat during project operation and maintenance to achieve the goal of no net loss of existing habitat value for burrowing owls. ▪ A monitoring and reporting plan addressing implementation and success of the management plan and identifying actions needed to maintain foraging and nesting habitat and reduce stressors on wintering and nesting burrowing owls. ▪ An adaptive management plan that includes remedial action to be taken if the performance standards of no net loss of burrowing owl nesting and foraging habitat value are not being met. Remedial action shall focus on site-specific enhancements, or if appropriate, acquisition of credits in a burrowing owl mitigation bank, or another form of mitigation acceptable to CDFW. ▪ If CDFW determines that off-site compensatory mitigation is necessary to comply with the performance standard of no net	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		loss of habitat acreage, function, and values for burrowing owls, compensation shall be consistent with the SSHCP goals of preserving and linking high-quality habitat, preserving and reestablishing natural land covers that provide suitable habitat, and maintaining or expanding the existing distribution of the species within the SSHCP Plan Area. The applicant may provide off-site compensatory mitigation through acquisition of a conservation easement or mitigation credits from an appropriate mitigation bank, as approved by CDFW. • This species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.	
	PS	*BR-1f: Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and their Foraging Habitat* • Implement Mitigation Measure AL-1 (see Chapter 4, "Agricultural Resources and Land Use") • During the year of project commencement, and each subsequent year in which project activities occur during the nesting season (e.g., March 1 through September 15), a qualified biologist shall conduct preconstruction surveys in accordance with *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Tech. Advisory Committee 2000); surveys shall only be required during the two survey periods immediately preceding the commencement of construction activities. • Consistent with CDFW's recommendations identified in their *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks* (Buteo swainsoni) *in the Central Valley of California* (CDFG 1994), if nesting Swainson's hawk are identified within 0.5 miles of the project site during preconstruction nesting bird surveys (see Mitigation Measure BR-1l, below) or at any point during project construction, ongoing monitoring by a qualified biologist shall be required to ensure there are no unauthorized impacts to this species and its habitat; typically a 0.25- to 0.5-mile buffer of an active nest site shall be implemented during the nesting season (e.g., March 1 through September 15) until the	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		young have fledged to avoid agitation to the nest. The requirement for monitoring shall be determined in consultation with CDFW biologists after they are notified of any nesting Swainson's hawk. • To minimize potential for collision by or electrocution of nesting raptors or migratory birds from project-related electrical infrastructure, the electrical collection infrastructure shall conform with the most current edition of the Avian Power Line Interaction Committee (APLIC) guidelines to prevent collisions and electrocutions, found at: https://www.aplic.org/mission. • Compensation shall be provided for the permanent loss of Swainson's hawk foraging habitat (i.e., grassland) to achieve a performance standard of no net loss of habitat acreage, function and values to Swainson's hawk. The project may achieve the performance standard through the County of Sacramento Swainson's Hawk Mitigation Program or other compensatory programs (e.g., mitigation banks; conservation easements). Under the County of Sacramento program, mitigation is required for the change in habitat value from the existing condition (75 percent of foraging habitat value remaining based on the AG-20 zoning) to the post-project habitat value. Permanent impacts to grassland foraging habitat from the proposed project would be determined once final approved construction design plans are completed and shall be compensated for at 75 percent of the acres of permanent impact; at the time of writing of this document, the total permanent impact on grassland foraging habitat was estimated at 353.02 acres corresponding to a compensatory mitigation requirement of 264.77 acres.[1] For permanent impacts to Swainson's Hawk foraging habitat totaling greater than 40 acres, the County Swainson's Hawk Mitigation	

[1] If, at any point prior to final approval of the project by the County, CDFW recognizes any portion of solar array fields as providing foraging habitat value for Swainson's hawk during operations, the permanent impact on grassland foraging habitat from the proposed project, and associated required compensation, may be modified accordingly.

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		Program would require the project to provide mitigation lands (i.e., via title and/or easement). For permanent impacts to foraging habitat totaling less than 40 acres, an impact mitigation fee (per acre fee plus administrative fee) may be paid to the County in-lieu of providing mitigation lands or paid for acquisition of credits from a mitigation bank approved by CDFW. If compensation is achieved outside the Swainson's Hawk Mitigation Program, it shall at minimum meet the mitigation requirement of the Program. *This species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.*	
	PS	*BR-1g: Avoid, Minimize, and Mitigate for Impacts on Tricolored Blackbird* • To the maximum extent feasible, clearing, grubbing, removal, and/or disturbance (e.g., trimming) to any vegetation that is suitable tricolored blackbird nesting habitat shall be performed outside of the nesting season (September through March) to avoid impacts to nesting birds. If vegetation disturbance/removal cannot be avoided during the nesting season for this species, the following measures shall be implemented. • A qualified biologist shall conduct a preconstruction survey for nesting tricolored blackbird approximately two days prior to vegetation or tree removal or ground-disturbing activities during the nesting season (approximately April through August). The survey shall cover the limits of construction and suitable nesting habitat within 500 feet. • If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance (i.e., non-disturbance) buffer from the active nest. The buffer distance for tricolored blackbird shall generally be 500 feet and shall be determined based on factors such as topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction shall be established in the field with flagging, fencing, or other appropriate barriers to avoid active	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		nests. Construction limits shall be based on the biologist-defined appropriate buffer distance and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. • If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days elapse between the survey and vegetation removal activities. • If an active nest is identified within 500 feet of the work area after construction has started, work within 500 feet of the nest shall be suspended until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the birds have fledged, limitations on construction activities that generate substantial vibration and/or noise, and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest. This species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.	
	PS	*BR-1h: Avoid, Minimize, and Mitigate for Impacts on Valley Elderberry Longhorn Beetle and Their Habitat* • Conduct a preconstruction survey for valley elderberry longhorn beetle consistent with the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)* (USFWS 2017), or more current conservation guidelines, to confirm and update the location of elderberry shrubs and occupancy by this species and to assess final project impacts. At of the time of publication of this document, a total of eight elderberry shrubs were located in the project site or within 165 feet of the project site (see Figure 9 of Appendix BR-1). • Direct impacts to individual elderberry shrubs (i.e., within 20 feet or less of project ground disturbance) shall be mitigated through transplanting the shrub(s) and providing compensation at a 1:1 ratio in accordance with the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		dimorphus*)* (USFWS 2017), or more current conservation guidelines. • Indirect impacts to individual elderberry shrubs (i.e., plants between 20 to 165 feet of project ground disturbance) shall be avoided by project-activities and are subject to the implementation of the following additional measures: ▪ *Avoidance and Fencing*. Project activities that may damage or kill an elderberry plant (e.g., trenching, paving, etc.) shall be avoided to the extent feasible. If avoidance of all plants is not feasible, impacts to plants shall be compensated through planting of elderberry plants in areas not subject to project disturbance at a ratio of 1:1. All areas to be avoided during construction activities shall be fenced and/or flagged as close to the project solar development area as feasible. Temporary construction fencing and flagging shall be installed at least 165 feet outside the edge of the driplines of the elderberry plants. Environmentally sensitive area signs shall be erected along the edge of the avoidance area. In areas where encroachment on the 165-foot buffer has been approved by USFWS, a minimum setback of at least 20 feet from the dripline of each elderberry plant shall be provided, as well as documentation of USFWS setback approval. ▪ *Timing*. All project-related activities that could occur within 165 feet of an elderberry plant shall be conducted outside of the flight season of the valley elderberry longhorn beetle (i.e., March through July) to the maximum extent feasible. ▪ *Trimming*. If necessary, trimming may remove or destroy valley elderberry longhorn beetle eggs and/or larvae and may reduce the health and vigor of the elderberry plant. Therefore, to avoid and minimize direct impacts to valley elderberry longhorn beetle, trimming shall occur between November and February and shall avoid the removal of any branches or stems that are greater than 1 inch in diameter. Measures to address regular and/or large-scale maintenance (trimming) shall be established and approved by USFWS.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		▪ *Mowing*. Mechanical weed removal within the dripline of any elderberry plant shall be limited to the season when adult valley elderberry longhorn beetles are not active (i.e., August through February) and shall avoid damage to the elderberry plant. ▪ *Construction Monitoring*. A qualified biologist shall monitor the project site if work would occur within the 165-foot avoidance buffer to ensure that all avoidance and minimization measures are implemented, as applicable. The amount and duration of monitoring shall depend on the project specifics and shall be discussed with USFWS. • A qualified biologist shall provide training for all contractors, work crews, and any on-site personnel on the status of the valley elderberry longhorn beetle, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for not complying with these requirements. This species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.	
	PS	*BR-1i: Avoid, Minimize, and Mitigate for Impacts on Vernal Pool Fairy Shrimp, Vernal Pool Tadpole Shrimp, or Midvalley Fairy Shrimp* • Unless a smaller buffer is approved through formal consultation with USFWS, construction fencing shall be installed a minimum of 250 feet from the delineated wetland edge of any potentially suitable aquatic habitats (e.g., vernal pools, seasonal wetlands) for vernal pool fairy shrimp and vernal pool tadpole shrimp. All construction and operations activities are prohibited within this buffer area. If total avoidance is achieved, no further action is required. • If avoidance, as described above, is not feasible, implement Mitigation Measure BR-3, Avoid, Minimize, and Mitigate for Impacts on State and Federally Protected Wetlands to achieve the performance standard of no net loss of State and Federally Protected Wetlands, including vernal pool habitat acreage, function, and values for vernal pool fairy shrimp, vernal pool	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		tadpole shrimp, and midvalley fairy shrimp. Direct and indirect effects to onsite suitable aquatic habitats that may support federally listed vernal pool branchiopods shall be offset through onsite preservation and/or the purchase of tadpole shrimp and fairy shrimp species preservation credits from a USFWS-approved in-lieu fee program or other USFWS-approved conservation or mitigation bank. These effects and compensation will be quantified in the Aquatic Resources Mitigation Plan provided by the project applicant. The mitigation ratios shall, at minimum, comply with applicable mitigation ratios in terms and conditions of biological opinion issued by U.S. Fish and Wildlife Service pursuant to section 7 of the Endangered Species Act. These species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.	
	PS	*BR-1j: Avoid, Minimize, and Mitigate for Impacts on American Badger* • A qualified biologist shall conduct focused surveys for American badger dens within two weeks prior to ground-disturbing activities in suitable habitat (i.e., undeveloped grassland) within the project site. The survey shall cover the limits of ground disturbance and a 100-foot buffer. Any potentially active American badger dens located during the survey that show signs of recent activity shall be evaluated (typically with remote cameras) to determine activity status. • If an active American badger den is detected during the breeding season (typically from March through May), then prior to construction, the qualified biologist shall establish a 100-foot no-disturbance buffer (e.g., staking, flagging, or similar measures) around the den. The buffer shall be maintained until the qualified biologist determines that the den is no longer active, and the young are no longer dependent upon the den for survival. If a natal den site cannot be avoided throughout the life of the project (including operations and maintenance), destruction of the natal	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		den burrow shall only proceed after the natal den is no longer active and no badger are present within the burrow. • If construction occurs during the non-breeding period (i.e., typically from June through February) and an active non-natal den is found in or immediately adjacent to the construction footprint, a qualified biologist shall attempt to trap or flush the individual (e.g., passive exclusion with one-way doors) and relocate it to suitable habitat away from construction. After exclusion/relocation is completed, the vacated or unoccupied den can be excavated, and construction can proceed. This species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.	
	PS	*BR-1k: Avoid, Minimize, and Mitigate for Impacts on Bats* • A qualified biologist shall conduct a preconstruction habitat assessment for communally roosting bats within the project site and a 300-foot buffer to the project site no less than 30 days prior to the start of construction. The habitat assessment should include a visual inspection of potential roosting features (e.g., buildings, hollows in trees), including looking for the presence of guano. If potential maternity roosts or winter hibernacula are found, their locations shall be mapped and the project shall avoid all areas within a 300-foot buffer around the potential roost sites until an Avian and Bat Protection Plan (ABBP) is prepared and approved by CDFW and USFWS (see below). The non-disturbance buffer shall remain in place during the maternity and winter hibernation seasons (May 1 through August 15, and November 1 through March 31) or until bats have vacated the roost, unless otherwise authorized by CDFW and USFWS. • If known or potential communal bat roosts (maternity or hibernacula) are identified within the project site or 300-foot buffer prior to project construction, an ABPP shall be prepared and implemented in coordination with CDFW and USFWS to reduce/eliminate impacts to bat and avian species during construction, operations, and maintenance. The ABPP shall include the following elements:	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		■ A description of conditions for bird and bat species present in and near the project site, including results of site-specific surveys. ■ An assessment of potential risks of project construction, operation, and maintenance on birds and bats based on the proposed activities. ■ Conservation measures that shall be employed to avoid, minimize, and/or mitigate potential adverse effects to these species. ■ A description of the avian and bat mortality monitoring and reporting that shall take place during project operation. ■ Remedial actions and an adaptive management process that shall be used to address potential adverse effects on avian and bat species. *A discussion of bats and potential impacts on bat roosts shall be included in the WEAP described in BMP-8 under Mitigation Measure BR-1a.*	
	PS	*BR-1l: Avoid, Minimize, and Mitigate for Impacts on Nesting Raptors and Migratory Birds* • Vegetation or tree removal shall be restricted to the period of September 1 through January 31, to avoid the bird nesting season. If any vegetation or trees are to be removed during the nesting season (February 1 through August 31), preconstruction nesting bird surveys shall be conducted by a qualified biologist, as described below, and such vegetation or tree removal shall only be conducted if no nesting migratory birds are found or if removal is delayed until the nest site is no longer active, as determined by a qualified biologist. • A qualified biologist shall conduct a survey for nesting birds within one week prior to vegetation/tree removal or ground-disturbing activities during the nesting season within suitable habitat (i.e., February 1 through August 31). The survey shall cover the limits of construction and accessible suitable nesting habitat within 300 feet (and up to 0.25 mile for some raptors). If	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than seven days elapse between the survey and vegetation removal activities. • If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance buffer from the active nest. The buffer distance shall typically range from 50 to 300 feet (or more for some raptors) and shall be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction to avoid active nests shall be established in the field with flagging, fencing, or other appropriate barriers and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. • If an active nest is identified in or adjacent to the construction zone after construction has started, work in the vicinity of the nest shall be suspended as needed until the project biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the nest has fledged and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest. • The ABPP described under Mitigation Measure BR-1k (Bats) shall be implemented to reduce/eliminate impacts to avian species during construction, operations, and maintenance. The ABPP shall include a discussion of the collection system which shall conform with the most current edition of the Avian Power Line Interaction Committee guidelines to prevent electrocutions, found at: https://www.aplic.org/mission *Protection measures for nesting raptors and migratory birds shall be included in the WEAP described in BMP-8 under Mitigation Measure BR-1a.*	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
	PS	*BR-1m: Avoid, Minimize, and Mitigate for Impacts on Crotch's Bumble Bee.* • Implement Mitigation Measure AL-1 (see Chapter 4, "Agricultural Resources and Land Use"). Prior to construction, a qualified biologist shall conduct focused surveys for Crotch's bumble bee in potential habitat within the project site during the Crotch's bumble bee worker flight period (March-September, peak in July). During the surveys, the qualified biologist shall flag inactive small mammal burrows and other potential nest or overwintering sites. If Crotch's bumble bee is detected, a site-specific Crotch's Bumble Bee Avoidance and Minimization Plan shall be prepared in coordination with CDFW and implemented. The Plan shall include a description of onsite habitat, potential nest and overwintering sites present, recommendations for avoidance and minimization (such as unoccupied burrow avoidance buffers), potential identification of methods to evaluate potential nest sites for use (e.g., burrow scoping or emergence surveys), and compensatory mitigation for the loss of potential nest sites, such as incorporation of appropriate native flower resources into the Agricultural Management Plan that would support this species throughout the flight period and promote development of queens (i.e., perennial plants) and reducing use of harmful pesticides. All the measures included in the approved plan shall be implemented during project activities.	LTSM
Impact BR-2: Have a Substantial Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community Identified in Local or Regional Plans, Policies, or Regulations, or by CDFW or USFWS	PS	*Implement Mitigation Measure BR-1a (Construction BMPs).* *Implement Mitigation Measure BR-1f (Swainson's Hawk).* Implement Mitigation Measure BR-3 (State or Federally Protected Wetlands).	LTS

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Impact BR-3: Have a Substantial Adverse Effect on State or Federally Protected Wetlands (including, but not limited to, Marsh, Vernal Pool, Coastal) through Direct Removal, Filling, Hydrological Interruption, or Other Means	PS	*BR-3:Avoid, Minimize, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters through the Development and Implementation of an Aquatic Resources Mitigation Plan* • Prior to project implementation, project designs shall be refined within the project site boundaries (e.g., location, orientation, and shape of solar arrays) to avoid and/or minimize potential impacts on State and federally-protected wetlands and other waters and to maintain hydrological and biological connectivity through the project site without increasing impacts on other resources. • If the final approved project does not avoid all State and federally-protected wetlands and other waters, the applicant must submit a jurisdictional delineation of waters of the U.S. and/or State prior to project implementation in support of required project permit applications for approval by USACE and subsequently all necessary permits shall be obtained for residual impacts on jurisdictional features. These typically include the following permits: CWA Section 404 Nationwide or Individual Permit, CWA Section 401 Water Quality Certification, CFGC Section 1600 Lake and Streambed Alteration Agreement, and Floodplain Encroachment Permit). All conditions of acquired permits shall be implemented to achieve the mitigation performance standards of the above-mentioned regulatory programs, including any compensatory mitigation, performance monitoring if required for on-site restoration, and reporting on the results of the monitoring to the appropriate agencies at the frequency and duration included in the permits. Concurrently, an Aquatic Resources Mitigation Plan shall be prepared and implemented that includes compensation for impacted jurisdictional resources to achieve the performance standard of no net loss of State and federally protected wetlands and other waters. The Aquatic Resources Mitigation Plan may include requirements such as:	LTS

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		▪ Directing construction traffic along access roads until they reach active work sites to limit soil compaction and disturbance to the site. ▪ Minimizing site grading and maintaining the overall pre-project site drainage patterns across the project site. ▪ Restricting unavoidable temporary construction activities within wetlands/other waters (e.g., driving vehicles/equipment through jurisdictional aquatic resources) to the dry season and implementing soil compaction prevention via use of rubber mats or other similar materials to protect the soil surface from and distribute the weight of equipment/vehicles when driving over wetlands/other waters. ▪ Restricting use of heavy equipment within wetlands/other waters within the permanent construction footprint to dry conditions (e.g., during dry season or so as not to form ruts of 6 inches or more) or dewatered areas. ▪ Siting inverters and transformers to avoid direct loss of wetlands and other waters. ▪ Delineation of the work site boundaries such that no work occurs outside the defined impact footprint of the project site. ▪ Restoring all temporary impacts to wetlands to pre-existing conditions. ▪ Establishing wetland avoidance buffers (e.g., typically a minimum of 50 feet although may be reduced to 10 feet in some circumstances) with flagging, staking, or other appropriate barriers. ▪ Developing final project designs to maintain existing on-site drainage patterns and ensure no reduction or increase in existing surface water flow off-site into adjacent lands. • For all work conducted in or within 50 feet of aquatic resources, a qualified biologist shall be on-site to monitor construction activities to ensure avoidance and minimization measures are properly implemented to protect sensitive aquatic resources and that no un-authorized impacts occur.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• Compensation shall be provided for project-related residual impacts to State and federally protected wetlands and other waters to achieve a performance standard of no net loss of the acreage, function, and values of jurisdictional resources. Compensatory mitigation requirements shall apply to residual impacts on all wetland and water features, whether preliminarily identified as potentially jurisdictional or not. Potential compensation options include one or more of the following: on-site restoration, off-site preservation, or purchasing mitigation credits from an agency-approved wetlands mitigation bank (e.g., Clay Station, Bryte Ranch, Laguna Creek, and Van Vleck Ranch), paying an agency-approved in-lieu fee, and/or developing conservation lands to compensate for permanent loss of resources. Mitigation ratios are expected to be no less than 1:1 and shall be determined during the permitting process. • Jurisdictional wetlands within and adjacent to the project site provide habitat to special-status species (e.g., California tiger salamander, western spadefoot, and large-listed branchiopods). Additional mitigation for potential direct and indirect impacts to special-status species habitat is required per Mitigation Measures BR-1c and BR-1i, and shall be included in the Aquatic Resources Mitigation Plan to achieve a no net loss of habitat acreage, function, and values at a mitigation ratio acceptable to the USFWS and CDFW for species within their respective jurisdiction and consistent with performance standards of applicable permits issued by USFWS and/or CDFW. • Implement standard construction BMPs provided in Mitigation Measure BR-1a, in particular BMP-1 (Construction Fencing), BMP-2 (Erosion Control), BMP-3 (Equipment Storage and Fueling), BMP-5 (Dust Control), BMP-9 (Soil Compaction), and BMP-10 (Revegetation) to protect adjacent wetlands and other waters from unauthorized encroachment and/or impacts outside the project site. Jurisdictional aquatic resources shall be included in the WEAP discussed as BMP-8 under Mitigation Measure BR-1a.	

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Impact BR-4: 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	PS	*Implement Mitigation Measure AL-1 (see Chapter 4, "Agricultural Resources and Land Use")* *Implement Mitigation Measure BR-1e (Burrowing Owl).* *Implement Mitigation Measure BR-1f (Swainson's Hawk).* *Implement Mitigation Measure BR-3 (State or Federally Protected Wetlands).*	LTS
Impact BR-5: Conflict with Any Local Policies or Ordinances Protecting Biological Resources, such as a Tree Preservation Policy or Ordinance	PS	*Implement Mitigation Measure BR-1f (Swainson's Hawk).*	LTS
Chapter 7, Climate Change			
Impact CC-1: Generate Greenhouse Gas Emissions, Either Directly or Indirectly, that May have a Significant Impact on the Environment?	Potentially Cumulatively Considerable (Construction) & Less than Cumulatively Considerable (Operational)	*CC-1. Implement Construction GHG Emission Best Management Practices during Construction Activities* • Improve fuel efficiency from construction equipment: • Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 3 minutes (5 minute limit is required by the state airborne toxics control measure [Title 13, sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site. • Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated. • Train equipment operators in proper use of equipment. • Use the proper size of equipment for the job.	Less than Cumulatively Considerable

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• Use equipment with new technologies (repowered engines, electric drive trains). • Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines). • Use alternative fuels for generators at construction sites such as propane or solar or use electrical power. • Use CARB-approved low carbon fuel for construction equipment. • Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes. • Develop a plan to efficiently use water for adequate dust control. • Reduce electricity use in the construction office by using compact fluorescent bulbs or light emitting diodes, powering off computers every day, and replacing heating and cooling units with more efficient ones. • Recycle or salvage non-hazardous construction and demolition debris, when practicable (goal of at least 75% by weight).	
Impact CC-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than Cumulatively Considerable	No mitigation is required.	Less than Cumulatively Considerable
Chapter 8, Cultural and Paleontological Resources			
Impact CR-1: Cause a Substantial Adverse Change in the Significance of a Historical Resource Pursuant to Section 15064.5	NI	No mitigation is required.	NI

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Impact CR-2: Cause a Substantial Adverse Change In The Significance of an Archaeological Resource Pursuant to Section 15064.5	PS	*CR-1. Worker Awareness Environmental Program (WEAP) and Archaeological Monitoring* Based on technical study results, there is potential for encountering unanticipated significant cultural resources and human remains. As such, pre-construction preparation and implementation of a WEAP and archaeological monitoring shall occur. 1. **Worker Awareness Environmental Program and Archaeological Monitoring**. Archaeological monitors shall be present during all initial ground-disturbing activities with the potential to encounter cultural resources. An archaeological monitoring and discovery plan shall be developed under the oversight of a qualified archaeological principal investigator meeting the Secretary of the Interior's Professional Qualification Standards prior to construction. This plan shall identify areas requiring monitoring, roles and responsibilities, and actions to be taken in the event of an inadvertent discovery. Prior to the initiation of ground-disturbing work, construction crews shall be made aware of the potential to encounter cultural resources and the requirement for cultural monitors to be present during these activities. This may occur as part of a WEAP. Archaeological monitoring may be adjusted (increase, decreased, or discontinued) at the recommendation of the archaeological principal investigator based on inspection. 2. **Reporting**. Daily monitoring logs shall be completed by an on-site archaeological monitor. Within 60 days following completion of construction, the qualified archaeological principal investigator shall provide an archaeological monitoring report to the County of Sacramento. This report shall include the results of the cultural monitoring program (even if negative), including a summary of any findings or evaluation/data recovery efforts, and supporting documentation that demonstrates all mitigation measures defined in the environmental document were appropriately met. Appendices shall include archaeological monitoring logs and documentation relating to any newly	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		identified or updated cultural resources. This report shall be submitted to the NCIC once considered final.	
	PS	*CR-2. Cultural Resources and Unanticpated Discoveries* In the event that human remains are discovered in any location other than a dedicated cemetery, work shall be halted and the County Coroner contacted. For all other potential archaeological or cultural resources discovered during project's ground disturbing activities, work shall be halted until a qualified archaeologist and/or tribal representative may evaluate the resource. 1. **Unanticipated human remains**. Pursuant to Sections 5097.5 and 5097.98 of the State PRC, and Section 7050.5 of the State Health and Safety Code, if a human bone or bone of unknown origin is found during construction, all work is to stop and the County Coroner and Planning and Environmental Review shall be immediately notified. If the remains are determined to be Native American, the coroner shall notify the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the MLD from the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposition of, with appropriate dignity, the human remains and any associated grave goods. 2. **Unanticipated cultural resources**. In the event of an inadvertent discovery of cultural resources (excluding human remains) during construction or decommissioning, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained at the applicant's expense to evaluate the significance of the find. If it is determined due to the types of deposits discovered that a Native American monitor is required, the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites as established by the NAHC shall be followed, and the monitor shall be retained at the applicant's expense.	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		a. Work cannot continue within the 100-foot radius of the discovery site until the archaeologist and/or tribal monitor conducts sufficient research and data collection to make a determination that the resource is either (1) not cultural in origin; or (2) not potentially eligible for listing on the NRHP or CRHR. b. If a potentially-eligible resource is encountered, then the archaeologist and/or tribal monitor, Planning and Environmental Review staff, and project proponent shall arrange for either (1) total avoidance of the resource, if possible; or (2) test excavations or total data recovery as mitigation. The determination shall be documented in writing and submitted to the County Environmental Coordinator as verification that the provisions of CEQA for managing unanticipated discoveries have been met.	
Impact CR-3: Disturb any Human Remains, Including Those Interred Outside of Dedicated Cemeteries	PS	*Implement Mitigation Measures CR-1 and CR-2.*	LTSM
Impact CR-4: Damage to or Destruction of Paleontological Resources During Earthmoving Activities	PS	*CR-3. Avoid Impacts to Unique Paleontological Resources.* 1. Prior to the start of earthmoving activities, the project applicant shall retain the services of either a qualified archaeologist or a qualified paleontologist to provide training to all construction personnel involved with earthmoving activities regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered. 2. If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work within 100-feet of the find and shall notify the project applicant. 3. The project applicant shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan. The recovery plan may include, but is not limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum curation for any specimen recovered, and a report of	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		findings. The recovery plan shall be submitted to the project applicant for review. Recommendations in the recovery plan shall be implemented before construction activities can resume at the site where the paleontological resource(s) were discovered.	
Chapter 9, Hydrology and Water Quality			
Impact HWQ-1: Violate Water Quality Standards or Substantially Degrade Surface or Groundwater Quality	LTS	No mitigation is required.	LTS
Impact HWQ-2: Impede Sustainable Groundwater Management of the Basin by Substantially Decreasing Groundwater Supplies or Interfering with Groundwater Recharge	LTS	No mitigation is required.	LTS
Impact HWQ-3: Substantially Alter Drainage Patterns or Add Impervious Surfaces Resulting in Increased Erosion or Siltation	LTS	No mitigation is required.	LTS
Impact HWQ-4: Substantially Alter Drainage Patterns or Add Impervious Surfaces That Would Exceed Storm Drainage Systems, Substantially Degrade Water Quality, Result in Increased Flooding, or Impede or Redirect Flood Flows	LTS	No mitigation is required.	LTS

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Impact HWQ-5: Conflict with a Water Quality Control Plan or Sustainable Groundwater Management Plan	LTS	No mitigation is required.	LTS
Chapter 10, Noise			
Impact NOI-1. Temporary, Short-Term Exposure of Sensitive Receptors to Construction Noise	PS	*NOI-1. For Evening and Nighttime Construction (i.e., outside of permitted construction hours (Section 6.68.090(e) of the County of Sacramento Code), Implement Noise-Reducing Construction Practices and Monitor and Record Construction Noise near Sensitive Receptors.* The project applicant(s) and their primary contractors for engineering design and construction shall ensure that the following requirements are implemented at each worksite during project construction to avoid and minimize construction noise effects on sensitive receptors. The project applicant(s) and primary construction contractor(s) shall employ noise-reducing construction practices. Measures that shall be used to limit noise shall include the measures listed below: • Pile driving shall be limited to the hours between 7 a.m. and 8 p.m. Monday through Friday, and between 8 a.m. and 6 p.m. on Saturdays and Sundays. • Noisy construction equipment and equipment staging areas shall be located as far as possible from nearby noise-sensitive land uses. • All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation. • All motorized construction equipment shall be shut down when not in use to prevent idling.	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		• Individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site). • Noise-reducing enclosures shall be used around stationary noise-generating equipment (e.g., compressors and generators). • Written notification of construction activities shall be provided to all noise-sensitive receptors located within 500 feet of the project site. Notification shall include anticipated dates and hours during which construction activities are anticipated to occur and contact information, including a daytime telephone number, for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) shall also be included in the notification. • Provide real-time noise monitoring at the boundary of the nearest sensitive receptor(s) during evening and nighttime construction activity occurring outside the hours exempted by the County Noise Ordinance. Any activity resulting in a measured exterior noise level that exceeds 50 dB at the property boundary of an occupied residence shall immediately cease.	
Impact NOI-2. Temporary, Short-Term Exposure of Sensitive Receptors to Potential Groundborne Noise and Vibration from Project Construction	LTS	No mitigation is required.	LTS
Impact NOI-3. Permanent Exposure of Off-Site Noise-Sensitive Receptors to Generation of Non-Transportation Noise Levels in Excess of Local Standards	PS	*NOI-2. Site Project Facilities Sufficiently Distant to Reduce Operational Noise Levels Below County General Plan Standards.* • Prior to issuance of building permits, the applicant shall provide sufficiently detailed designs demonstrating that operation of the proposed project facilities would not exceed County noise standards as prescribed by Table 2 of the County General Plan Noise Element, including the nighttime standard of 50 dB L_{50}. The design of the facility shall be based on reference noise	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		levels for operation equipment (e.g., transformer) from the manufacturer's specifications document, enclosure type and material, and calculations demonstrating that the siting of the project facilities is sufficiently distanced and the project's operational noise is reduced to comply with the applicable County noise standards. • Upon request from the County in instances when complaints are received, the applicant shall provide an acoustical analysis consistent with the requirements provided in the Noise Element of the County General Plan.	
Chapter 11, Traffic and Circulation			
Impact TC-1: Conflict with a Program, Plan, Ordinance or Policy Addressing the Circulation System, including Transit, Roadway, Bicycle, and Pedestrian Facilities	LTS	No mitigation is required.	LTS
Impact TC-2: Conflict or be Inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b)	LTS	No mitigation is required.	LTS
Impact TC-3: Substantially Increase Hazards Due to a Geometric Design Feature (E.G., Sharp Curves or Dangerous Intersections) or Incompatible Uses (E.G., Farm Equipment)	PS	*TC-1. Prepare and Implement Traffic Control Plan* To address potential traffic hazards during construction, prior to the commencement of construction or demolition activities the applicant shall prepare a traffic control plan for review and approval by the County Department of Transportation. Typical measures to be included in the traffic control plan include signage, traffic cones, and flaggers to help ensure safe and efficient movement of traffic through the affected area. In addition, the traffic control plan would provide for notification of emergency responders regarding the planned construction activities.	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Impact TC-4: Result in Inadequate Emergency Access	LTS	No mitigation is required.	LTS
Chapter 12, Tribal Cultural Resources			
Impact TCR-1: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource	PS	*TCR-1a through TCR-1c are recommended to address this potentially significant impact.* *TCR-1a. Inadvertent/Unanticipated TCR Discoveries* If any suspected TCRs are discovered during ground disturbing project-related activities, all work shall cease within 100 feet of the find. A Tribal Representative from culturally affiliated tribes shall be immediately notified and shall determine if the find is a TCR (PRC Section 21074). The Tribal Representative will make recommendations regarding the treatment of the discovery. Preservation in place is the preferred alternative under CEQA and UAIC protocols, and every effort must be made to preserve the resources in place, including through project redesign. Work at the discovery location cannot resume until all necessary investigation and evaluation of the discovery under the requirements of the CEQA, including AB 52, has been satisfied. The contractor shall implement any measures deemed by the CEQA lead agency to be necessary and feasible to preserve in place, avoid, or minimize impacts to the resource, including, but not limited to, facilitating the appropriate tribal treatment of the find, as necessary.	LTSM
	PS	*TCR-1b. Native American TCR Monitoring* To minimize the potential for destruction of or damage to existing or previously undiscovered TCRs and to identify any such resources at the earliest possible time during project-related earthmoving activities, the project applicant and its construction contractor(s) will implement the following measures: 1. Native American Monitors from UAIC and Wilton Rancheria, paid by the project applicant, will be invited to monitor the vegetation	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
		grubbing, stripping, grading, or other ground-disturbing activities in the project area to determine the presence or absence of any TCRs. Native American Representatives from culturally affiliated tribes act as a representative of their Tribal government and shall be consulted before any cultural studies or ground-disturbing activities begin. 2. Native American Representatives and Native American Monitors have the authority to identify sites or objects of significance to Native Americans and to request that work be stopped, diverted, or slowed if such sites or objects are identified within the direct impact area; however, only a Native American Representative can recommend appropriate treatment of such sites or objects.	
	PS	*TCR-1c. Notification and Inspection of Ground Disturbance* A minimum of seven days prior to beginning earthwork, clearing and grubbing, or other soil disturbing activities, the project applicant shall notify lead agency of the proposed earthwork start-date. The applicant shall contact the UAIC and Wilton Rancheria with the proposed earthwork start-date and UAIC and Wilton Rancheria Tribal Representatives or Tribal Monitors shall be invited to inspect the project site, including any soil piles, trenches, or other disturbed areas, within the first five days of groundbreaking activity, or as appropriate for the type and size of project. During this inspection, UAIC and Wilton Rancheria Tribal Representatives or Tribal Monitors may provide an on-site meeting for construction personnel information on TCRs and workers awareness brochure. If any TCRs are encountered during this initial inspection, or during any subsequent construction activities, work shall be suspended within 100 feet of the find and the measures included in Mitigation Measure TCR-1a, Inadvertent/Unanticipated Discoveries, shall be implemented. Preservation in place is the preferred alternative under CEQA and UAIC protocols, and every effort must be made to preserve the resources in place, including through project redesign.	LTSM

Impacts	Level of Significance Before Mitigation	Mitigation Measure	Level of Significance After Mitigation
Chapter 13, Wildfire			
Impact WF-1: Substantially Impair an Adopted Emergency Response Plan or Emergency Evacuation Plan	PS	*Implement Mitigation Measure TC-1.*	LTSM
Impact WF-2: Exacerbate Wildfire Risk	PS	*WF-1. Demonstrate Compliance with the California Fire Code, California Building Code, and Sacramento Metro Fire Department Requirements and Standards, and Manage Vegetation On-site.* Prior to the approval of project designs and issuance of grading permits, the applicant shall demonstrate compliance with California Fire Code requirements and Sacramento Metro Fire Department standards, including those related to the design of solar panels and associated electrical components; defensible space requirements (100 feet from each side of a structure, but not beyond the property line per PRC Section 4291); clearance around electrical equipment; keeping portable fire-fighting equipment on-site; and storing water for emergency use. The applicant shall further demonstrate that ignition-resistant building materials have been incorporated into project designs consistent with the California Building Code. The applicant shall keep grasses and weeds on the undeveloped portion of the project site to a height of six inches or less after the grazing season, and throughout the dry season months, between May and November, to manage grass height and fuel load on-site.	LTSM

Notes: LTS= less than significant, LTSM= less than significant with mitigation, NI= no impact, PS= potentially significant, S=Significant, SU = Significant and Unavoidable

MITIGATION MONITORING AND REPORTING PROGRAM

It shall be the responsibility of the project applicant to comply with the Mitigation Monitoring and Reporting Program (MMRP) for this project and to reimburse the County for all expenses incurred in the implementation of the MMRP, including any necessary enforcement actions. The project applicant shall pay an initial deposit of $10,000. This deposit includes administrative costs of $1,050, which must be paid to the County of Sacramento Planning and Environmental Review prior to recordation of the MMRP and prior to recordation of any final parcel or subdivision map. The remaining balance will be due prior to review of any plans by the Environmental Coordinator or issuance of any building, grading, work authorization, occupancy or other Project-related permits. Over the course of the project, the County of Sacramento Planning and Environmental Review will regularly conduct cost accountings and submit invoices to the Project Applicant when the County monitoring costs exceed the initial deposit.

TERMINOLOGY USED IN THIS EIR

This EIR uses the following terminology to describe environmental effects of the project.

Significance Criteria. A set of criteria used by the lead agency to determine at what level, or "threshold," an impact would be considered significant. Significance criteria used in this EIR include those that are set forth in the CEQA Guidelines, or can be discerned from the CEQA Guidelines; criteria based on factual or scientific information; criteria based on regulatory standards of local, State, and federal agencies; and criteria based on goals and policies identified in the Sacramento County General Plan.

Less-than-Significant Impact. A Project impact is considered less than significant when it does not reach the standard of significance and would, therefore, cause no substantial change in the environment. No mitigation is required for less-than-significant impacts.

Potentially Significant Impact. A potentially significant impact is a substantial, or potentially substantial, adverse change in the environment. Physical conditions that exist within the area could be directly or indirectly affected by the Project. Impacts may also be short-term or long-term. A project impact is considered significant if it reaches the threshold of significance identified in the EIR. Mitigation measures may reduce a potentially significant impact to less than significant.

Significant Unavoidable Impact. A project impact is considered significant and unavoidable if it is significant and cannot be avoided or mitigated to a less-than-significant level once the project is implemented.

Cumulative Significant Impact. A cumulative impact can result when a change in the environment results from the incremental impact of a project when added to other related

past, present or reasonably foreseeable future projects. Significant cumulative impacts may result from individually minor but collectively significant effects.

Mitigation. Mitigation measures are revisions to the project that would minimize, avoid, or reduce a significant effect on the environment. CEQA Guidelines Section 15370 identifies the following five types of mitigation:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

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2 PROJECT DESCRIPTION

INTRODUCTION

Sloughhouse Solar, LLC (applicant) is proposing to construct, operate, and decommission a new 50-megawatt (MW) solar energy facility on an approximately 380-acre project site in the Cosumnes community of unincorporated Sacramento County. Approval of the proposed Sloughhouse Solar project (project) would result in the construction, operation, and eventual decommissioning of solar-energy generation, energy storage, and electrical distribution facilities. The project parcels would be developed with solar panel arrays and ancillary facilities, energy storage facilities, an electrical substation, internal roads, retention basins, and distribution lines connecting to the regional power grid. The project site is located on agricultural grazing lands and is adjacent to an existing solar energy facility. The electrical power provided by the project would be supplied to the Sacramento Municipal Utility District (SMUD) using existing, adjacent SMUD distribution facilities. Plate PD-1 shows the regional location of the project.

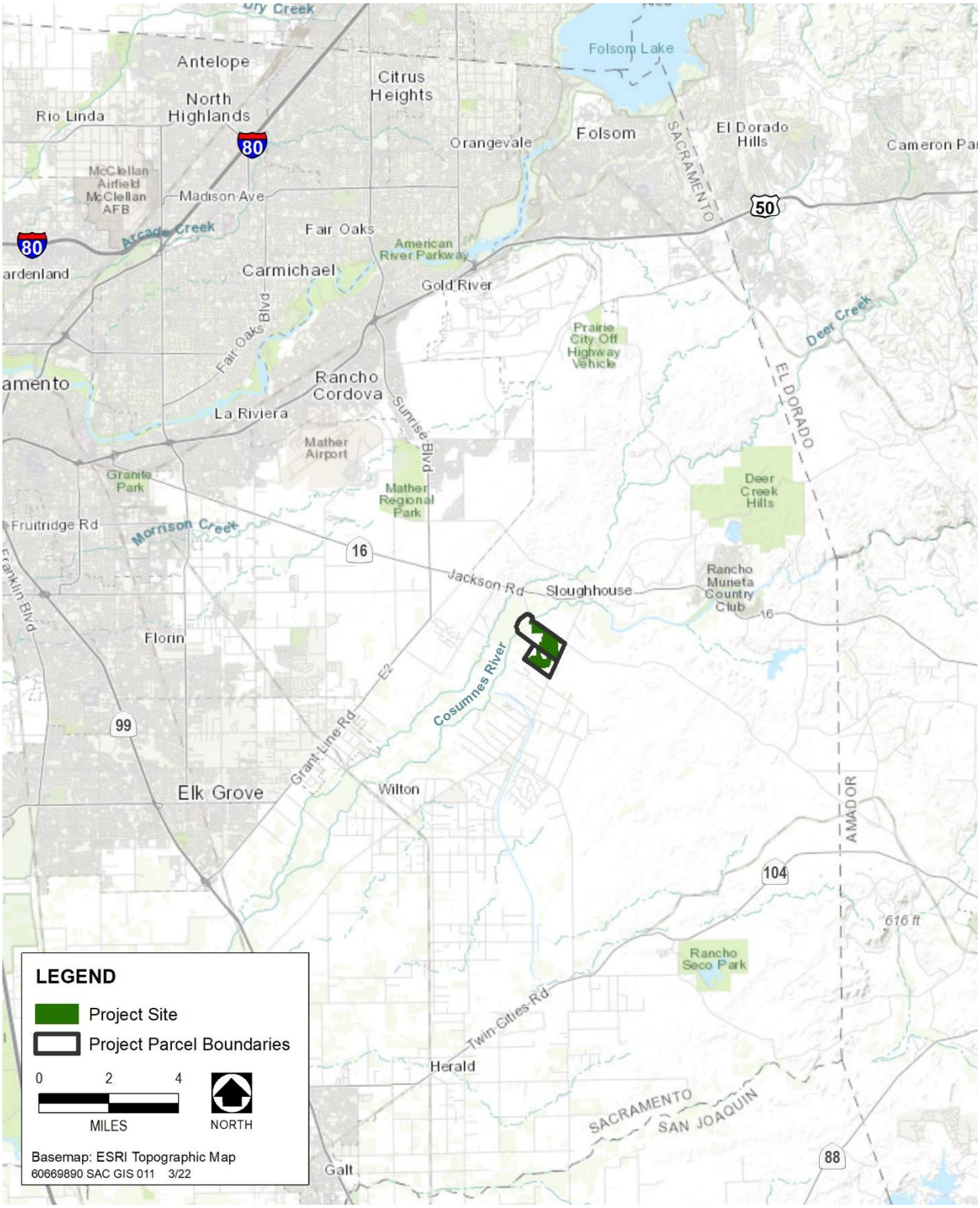
Sacramento County (County) is the lead agency under the California Environmental Quality Act (CEQA) with primary responsibility for discretionary approval of the proposed project, specifically a Conditional Use Permit (CUP) requested by the applicant. As such, the County as CEQA lead agency has prepared this Draft Environmental Impact Report (EIR) consistent with requirements of the CEQA statute and the CEQA Guidelines.

PROJECT LOCATION

The project site is generally located south of Jackson Highway, southeast of the Cosumnes River, west of Dillard Road, and south of Meiss Road in the Cosumnes community (Supervisor District 5). More specifically, the proposed project site is located southwest of the intersection of Meiss Road and Dillard Road, adjacent to an existing solar energy facility at 7794 Dillard Road. The geographic center of the project site is at 38.469825° North and -121.180041° West, at an elevation of approximately 145 feet above mean sea level. The project site is within two existing legal parcels, but the project site does not encompass the entirety of these two existing parcels. The Assessor Parcel Numbers (APNs) for the parcels that contain the project site are 126-0110-001 and 126-0110-003, which total approximately 796 acres in total land area. The project site comprises approximately 380 acres of primarily agricultural lands within the two existing parcels that contain the project site. Refer to Plate PD-2 for an illustration of the project site within the two existing parcels that contain the project site.

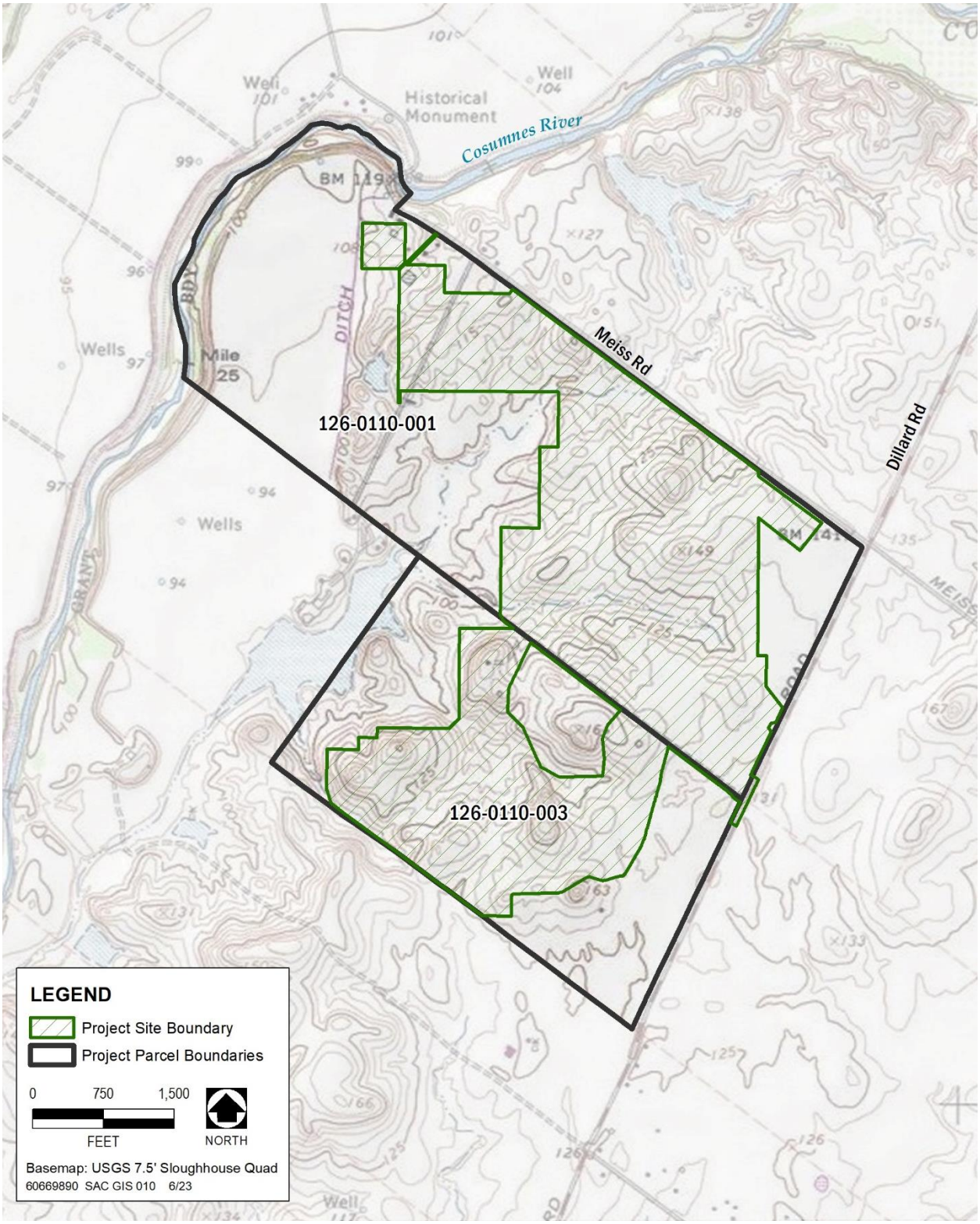
Table PD-1 provides the APNs, zoning, and approximate acreages that comprise the project site.

Plate PD-1: Regional Location



Source: AECOM 2022

Plate PD-2: Project Boundary



Source: Dudek 2023; adapted by AECOM 2023

Table PD-1: Project Site Parcels

APN	Total Parcel Acreage	Project Site Acreage	Zoning
126-0110-001	520	250	AG-20
126-0110-003	276	130	AG-20

Note: AG-20 = Agricultural 20, which is a zoning district intended to accommodate agricultural uses that also permits one home on each 20-acre parcel.

The proposed project would interconnect to an existing 69 kiloVolt (kV) power line located within the east side of the Dillard Road right-of-way.

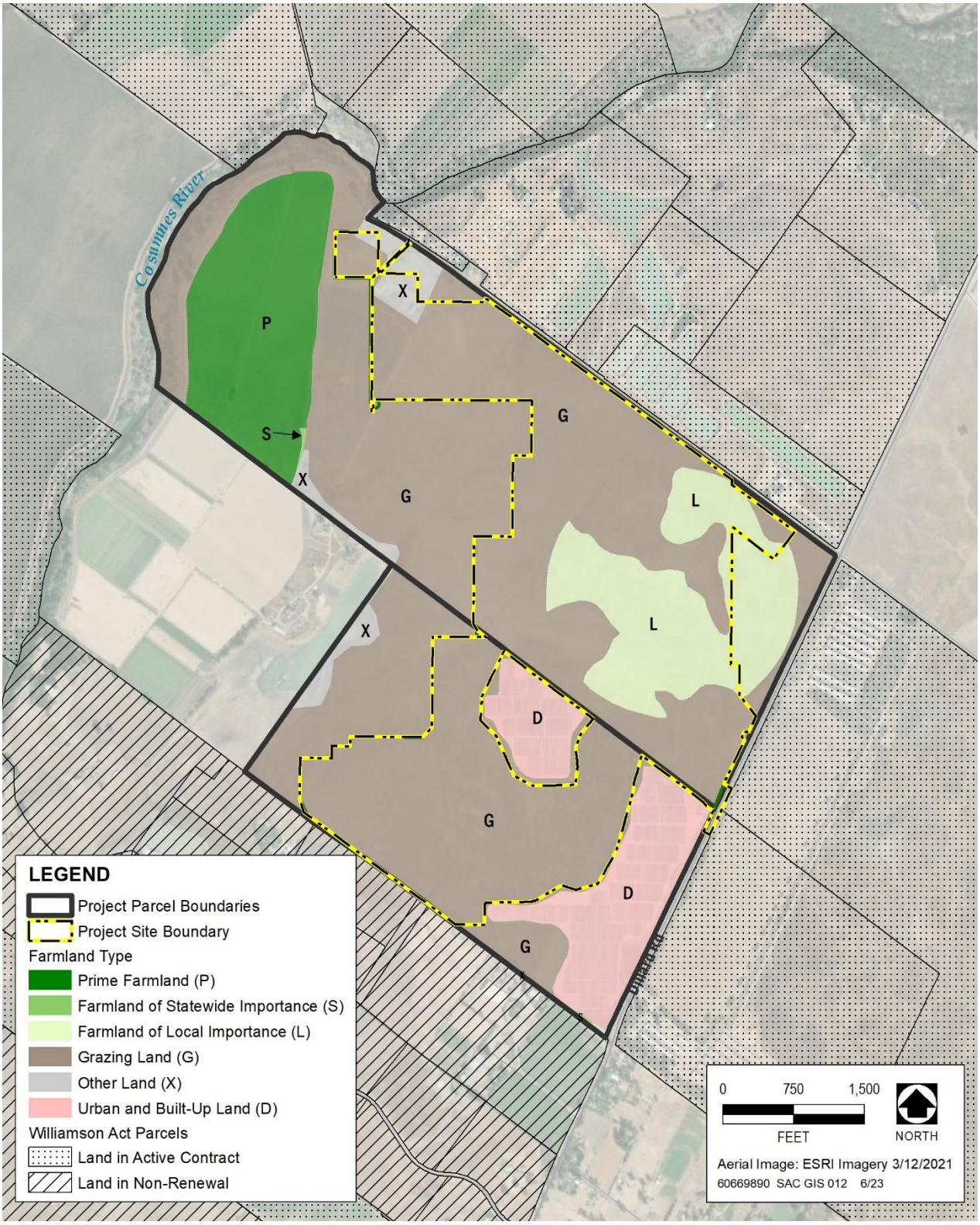
ENVIRONMENTAL SETTING

The proposed project site is situated between the Cosumnes River and Dillard Road in southeastern Sacramento County. The topography varies, but generally consists of rolling hills with gentle slopes. Elevations range from 100 feet above mean sea level at the river to 150 feet upland. The site gradually slopes downward towards a large off-site drainage pond along the southwest boundary of the project site. Much of the project site is open grassland that has historically been used for grazing and other agricultural activities (e.g., alfalfa production). Seasonal wetlands, vernal pools, and ephemeral drainages are scattered throughout the project site and the existing parcels that contain the project site.

The project site is designated General Agricultural (80 acres) (GA-80) by the Sacramento County General Plan Land Use Element (County of Sacramento 2017) and both project parcels are zoned Agricultural 20 (AG-20) (County of Sacramento 2020). As shown on Plate PD-3, the project site includes areas characterized as grazing land, farmland of local importance, and other land (residence and farmstead). Areas outside of the project site but within the two parcels that contain the project site include urban and built-up land (where the existing solar facility is located), grazing land, other land, prime farmland, farmland of statewide importance, farmland of local importance, and other land.

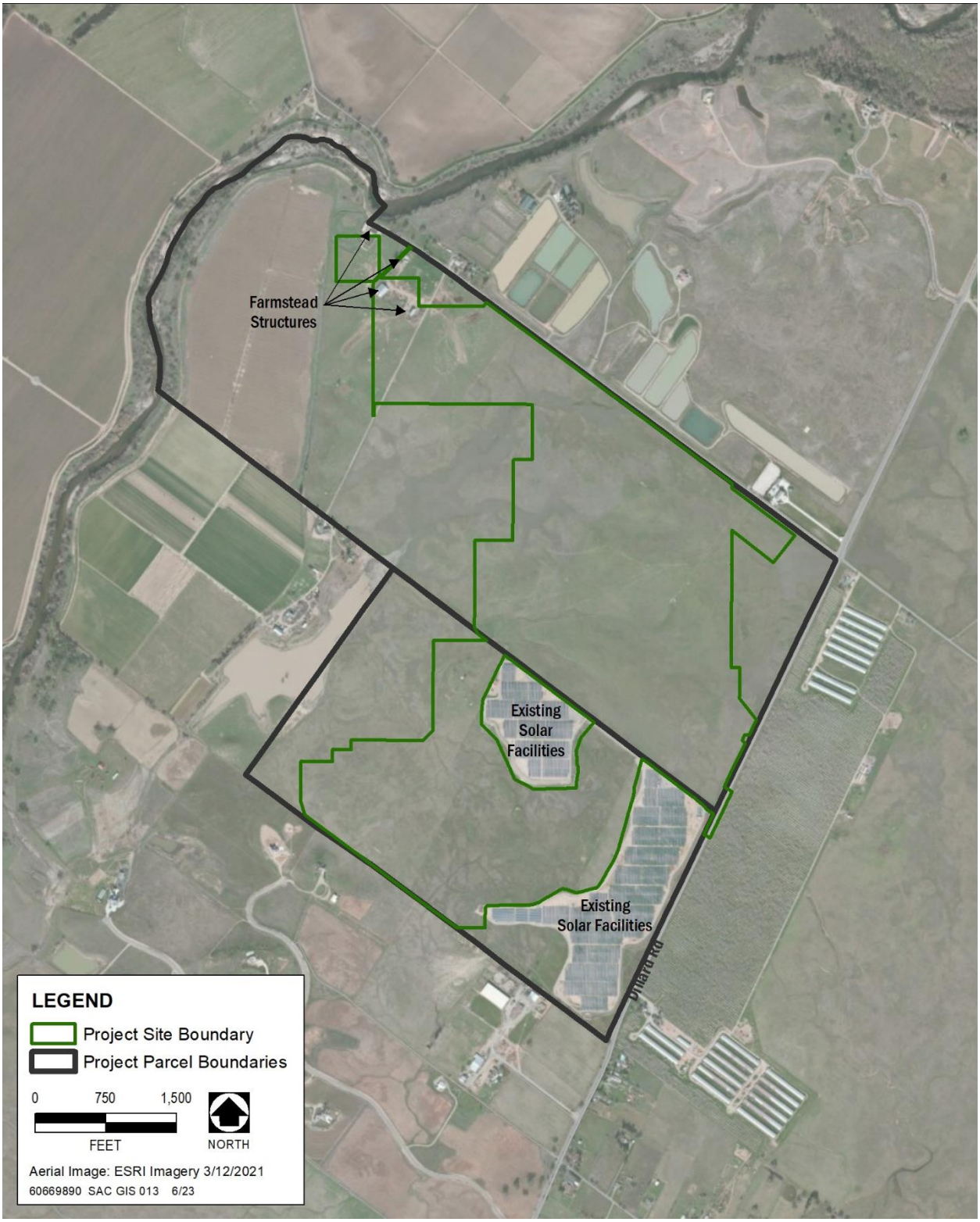
As described above in the “Project Location” section, the project site is within two existing legal parcels (parcels 126-0110-001 and 126-0110-003), but the project site does not encompass the entirety of these two existing parcels. Existing buildings/infrastructure on the northern parcel (parcel 126-0110-001) include an existing farmstead consisting of a home, multiple barns, and equipment storage areas in the northern portion of the project site. Existing infrastructure on the southern parcel (parcel 126-0110-003) includes a 73-acre solar field and an electrical substation, which are not part of the project site. (This existing solar facility was previously entitled under County Control No. PLNP2010-00126, is operated by a separate entity and is not part of the proposed project.) The only extant structures within the 380-acre project site are the existing farmstead components in the northwestern corner of the project site, as exhibited in Plate PD-4, Aerial Photo.

Plate PD-3: Agriculture and Farmland



Sources: DOC FMMP 2018, Sacramento County 2022

Plate PD-4: Aerial Photo



Sources: Sacramento County 2022, Compiled by AECOM 2023

The immediately surrounding land uses are entirely agricultural and rural residential. There are agricultural (AG-20) homes on 20-acre parcels south and west of the parcels that contain the project site. Farther south, there are agricultural-residential (A-2 and A-5) properties consisting of parcels of 2- to 5-acres in land area. To the east of Dillard Road are agricultural properties (AG-80) of 80 acres or more. Northwest of the parcels containing the project site, there is a mitigation bank for a variety of wetland and wildlife resources. The Cosumnes River borders the parcels containing the project site to the northwest and is approximately 150 feet from the nearest proposed solar facilities. See Plate PD-5 for surrounding land uses and zoning. The unincorporated Sacramento County community of Rancho Murieta is located approximately 3.5 miles to the northeast.

PROJECT BACKGROUND

The project is proposed by the applicant to generate and sell solar-generated electricity to an electric utility. The applicant has entered into an agreement to supply SMUD with the renewable energy generated by the project for use in the SMUD service area. The project would assist SMUD in achieving SMUD's Renewable Portfolio Standard (RPS) goals for renewable energy, and carbon reduction targets, including SMUD's 2030 Zero Carbon Plan. The 2030 Zero Carbon Plan is a plan to eliminate carbon emissions from SMUD's power supply by 2030. The energy storage elements of the project would help balance supply and demand by capturing and storing renewable energy generated during daylight hours to meet peak evening demand.

PROJECT OBJECTIVES

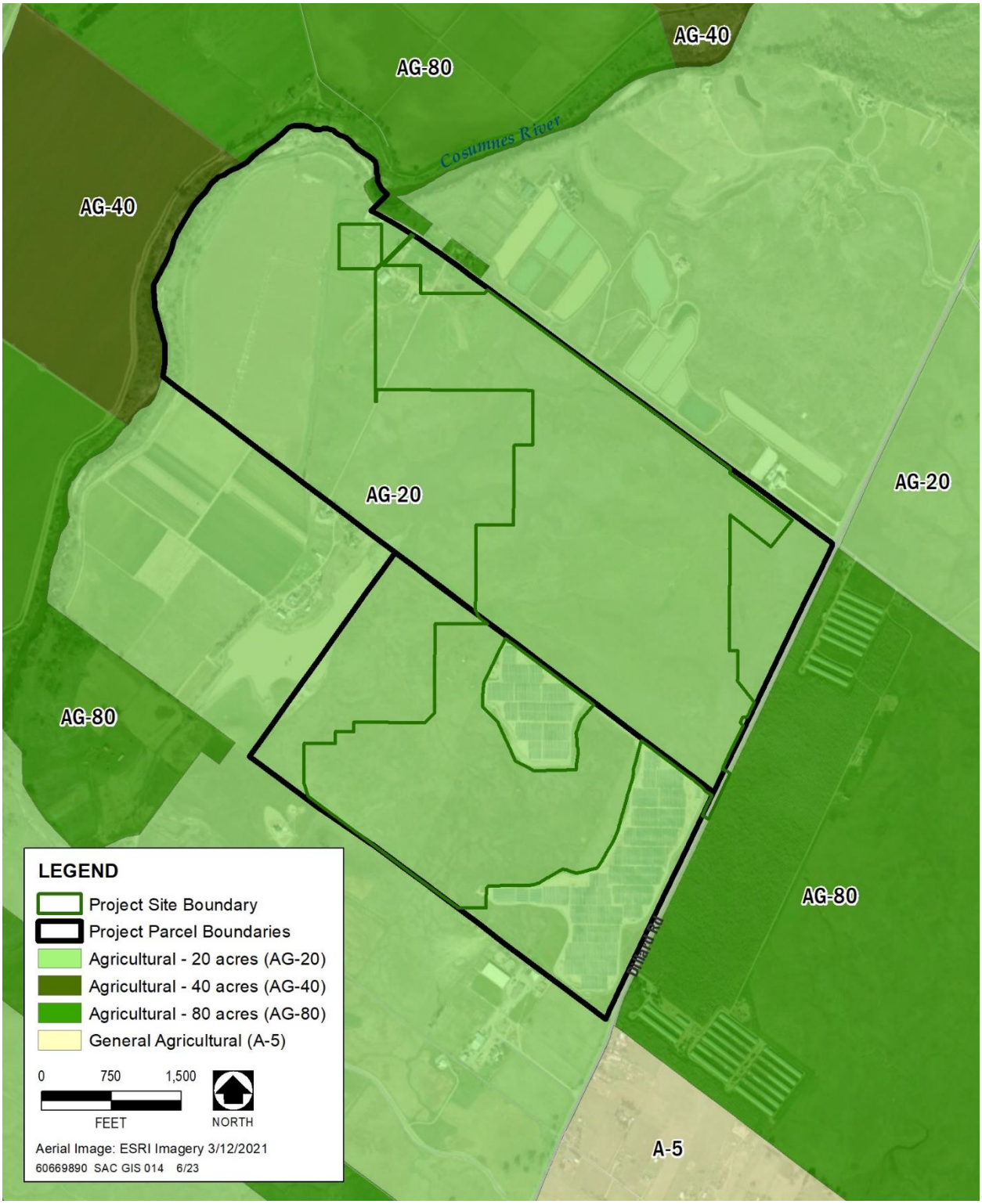
Per Section 15124(b) of the CEQA Guidelines, the project description shall include:

> A statement of the objectives sought by the proposed project. A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project and may discuss the project benefits.

The project applicant has provided the following statement of basic project objectives consistent with CEQA Guidelines Section 15124 (b):

- Provide a local supply of solar energy for the Sacramento County region to implement the County of Sacramento General Plan applicable to renewable energy.
- Provide cost-effective commencement of delivery of local utility-scale solar energy to support attainment of SMUD's (a) 2030 Zero Net Carbon Plan targets, and (b) Integrated Resource Plan targets.
- Support SMUD region in attainment of state 2030 Renewable Portfolio Standards.

Plate PD-5: Surrounding Land Uses and Zoning



Source: Sacramento County 2021

- Comply with SMUD's Integrated Resource Plan siting and size criteria for local utility-scale solar facilities.
- Optimize use of existing electrical distribution and other infrastructure with existing capacity to minimize environmental impacts of new construction.
- Provide local employment and training opportunities for a variety of building trades.

PROPOSED PROJECT

The proposed project consists of an approximately 50-MW solar energy generating facility with a backup energy storage component. The energy generation process starts with photovoltaic (PV) cells that make up PV modules, which are environmentally sealed[1] collections of PV cells that are generally non-reflective. Groups of PV modules are wired together to form an array. The direct current (DC) produced by an array is collected at an inverter (a power conversion device) where the DC is converted to alternating current (AC). The voltage of the electricity is then increased by a transformer at each power conversion station to a medium-voltage level (typically 34.5 kV). Medium-voltage electric lines located underground and/or overhead collect the electricity from each medium-voltage transformer and transmit it to an on-site substation facility, where the voltage is further increased by a high-voltage transformer to match the voltage level in the regional electric grid.

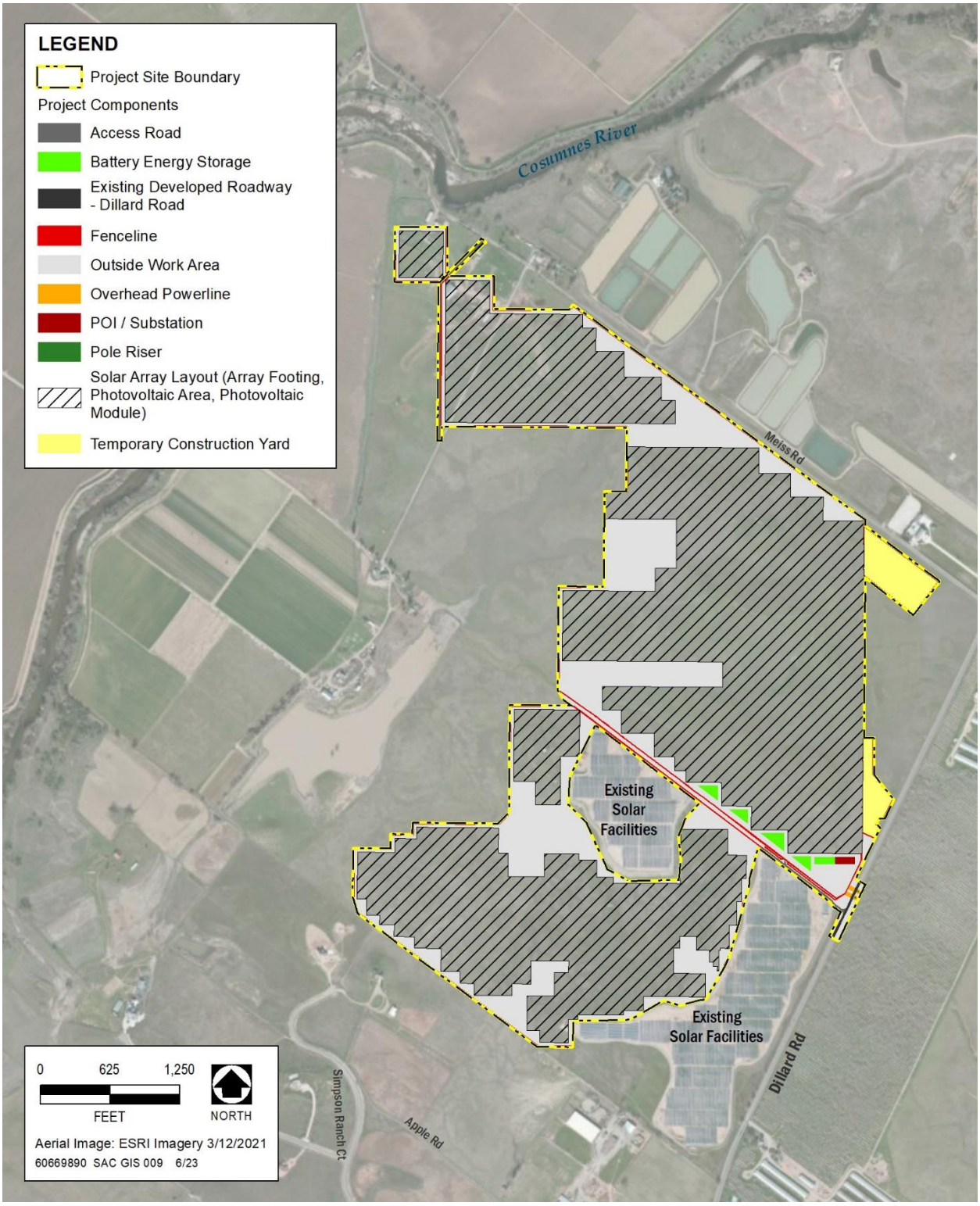
In addition to the proposed project facilities described below, the project would include the installation of disconnect switches, fuses, circuit breakers, and other miscellaneous equipment throughout the site for electrical protection and operations and maintenance purposes.

The design and construction of the solar arrays, energy storage facilities, and auxiliary facilities (e.g., substation) would be required by the County to be consistent with all applicable County building standards.

Plate PD-6 shows the proposed conceptual project site plan. The total acreage within and including the fence line of the project is approximately 380 acres. Table PD-2 breaks down the component acreage of the project footprint.

[1] An environmental seal, usually composed of rubber, acts as a barrier between the power supply and its environment. Environmental sealing helps prevent contaminants from breaching the power supply. The seal maintains the equipment's electrical performs and is necessary for effective, safe equipment operation in many settings.

Plate PD-6: Conceptual Site Plan



Sources: Dudek 2022, Sacramento County 2022, Compiled by AECOM 2023

Table PD-2: Project Component Acreage

Project Component	Acreage
Access Road	1.3
Battery Energy Storage	1.5
Fenceline	0.6
Solar Array Layout	289.1
Outside Work Area	78.6
Existing Developed Roadway - Dillard Road	0.3
Overhead Powerline	0.2
POI / Substation	0.3
Pole Riser	0.01
Temporary Construction Yard	8.6
TOTAL	**380.4**

Source: Dudek 2022, Compiled by AECOM 2023
POI = Point of Interconnection

PROPOSED PROJECT FACILITIES

The proposed project would use PV technology to convert sunlight directly to electricity. The PV arrays would be mounted on fixed-tilt or tracker structures. The proposed project would export energy at a point of interconnection along Dillard Road (69 kV distribution system operated by SMUD), as shown on Plate PD-6. In addition to generation of energy, the project would incorporate battery storage, further described below.

The major components of the proposed project are described below.

PHOTOVOLTAIC SOLAR MODULES

When sunlight strikes a PV module, the energy absorbed is transferred to electrons in the atoms of the semiconductor causing them to escape from their normal positions and become part of the current in an electrical circuit. The PV modules convert the sunlight directly into low-voltage DC electricity that is subsequently transformed to AC electricity through an inverter. The system only operates when the sun is shining during daylight hours. The system operates at peak output when the sunlight is most intense, though it also produces power in low light conditions. The maximum energy output is dependent on several variables, including off-take arrangements and the evolving efficiency of PV panels, and thus the project could generate up to 50 MW. Refer to Plate PD-6 for the general layout of the proposed solar arrays. The following sections describe how the PV modules would be installed and the associated auxiliary facilities.

FIXED-TILT AND TRACKER STRUCTURES

Each array would measure approximately 400 feet by 600 feet with a nominal output of 1 to 2 MW-AC. Fixed tilt arrays would be oriented in east-west rows and face in a generally southern orientation with a tilt angle between 10 and 35 degrees to maximize the amount of incidental solar radiation absorbed over the year. Single-axis trackers typically rotate ±60 degrees (0 degrees is horizontal) along a nominally north-south axis to track the sun's

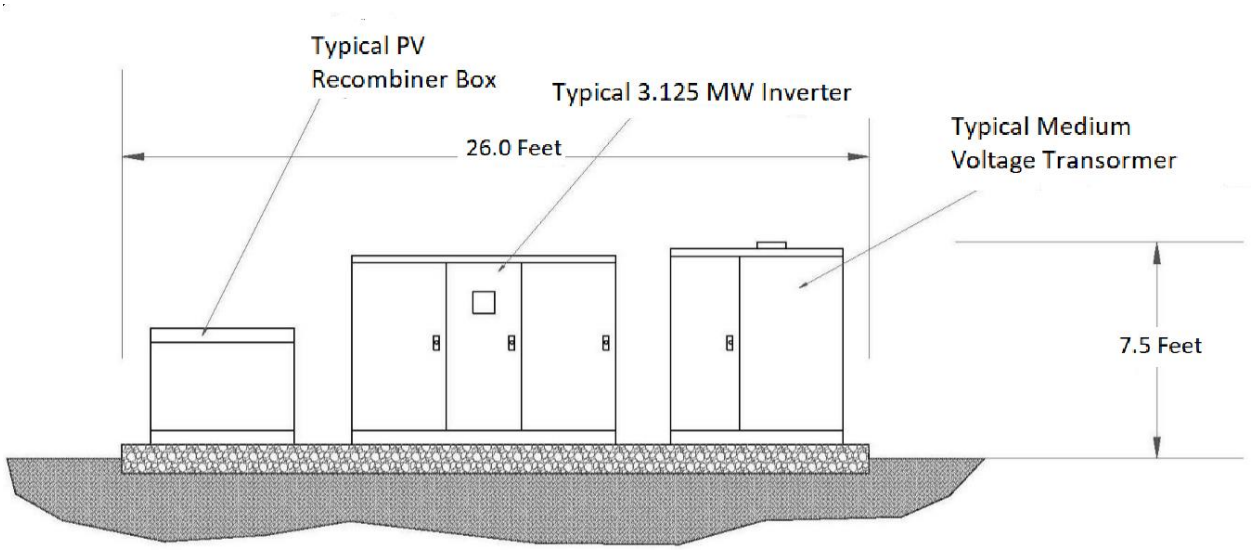
movement throughout the day. Dual-axis trackers rotate to follow the sun's east-west movement and track the sun's seasonal and/or daily shift from low to high on the horizon. Structural support elements would be constructed of corrosion-resistant steel, aluminum, or equivalent members that are attached to circular piers or I-beam posts that would be driven into the prepared base grade of the site. Each rack would hold about 80 to 90 panels and at its highest edge would have a maximum height of approximately 12 feet above grade. The minimum clearance from the lower edge of the panel to ground level would be about 32 inches. Photo PD-1 shows a typical single-axis tracker array viewed from behind a chain link fence.

Photo PD-1: Typical Single-Axis Solar Array and Chain Link Fence

INVERTERS AND PAD-MOUNTED TRANSFORMERS

At the center of each PV array, a power conversion station would be installed to take the DC power output and convert it to AC power through inverter facilities. An adjacent transformer would step the voltage up to a medium-voltage level. The medium-voltage outputs from each of the pad-mounted transformers would be collected via combining switchgear located at discrete locations throughout the project site. The medium-voltage output from the combining switchgear would connect to the project substation, where it would then be stepped up to 69 kV for export to the grid. Plate PD-7 shows a typical inverter station diagram, with facilities that measure approximately 7.5 feet in height and 26 feet in length. These facilities would be installed upon a concrete mat foundation or on a series of pilings similar in nature to those that hold the solar array.

Plate PD-7: Typical Inverter Station



SUBSTATION AND SWITCHYARD

The location of the on-site substation is shown on Plate PD-6. The substation transformer would step-up the voltage from the collection-level voltage to 69 kV. Additional substation facilities include a circuit breaker, metering units, control building, buswork (overhead line components), Supervisory Control and Data Acquisition (SCADA), and associated substation equipment. The substation facilities would be enclosed with secured fencing and include security lighting. A typical substation facility is shown on Photo PD-2.

The proposed generation tie line (gen-tie) would connect from the substation switchgear to the existing SMUD regional distribution facilities located along Dillard Road and adjacent to the existing solar facilities and proposed substation. Due to the proximate siting of the proposed substation and point of interconnection, limited gen-tie facilities would be required. However, an existing power line adjacent to the existing solar facilities at the southeast portion of the project site would be relocated to accommodate the proposed solar arrays.

Photo PD-2: Typical Substation Facilities

ENERGY STORAGE

The project would incorporate battery energy storage facilities, as well as energy storage housed within the inverters. The storage component would be centralized or located adjacent to the substation or switchgear, or alternatively, the energy storage component may be distributed throughout the plant adjacent to individual power conversion centers. The storage component would be housed in a single warehouse-type building or alternatively in smaller modular structures such located throughout the site. The battery storage structure(s) would be self-contained and supported on a concrete mat foundation. Photo PD-3 shows a typical modular structure measuring approximately 32 feet long and 9 feet high. Plate PD-6 shows a conceptual layout area at the southeast portion of the project site for typical battery storage facilities.

Photo PD-3: Modular Battery Structure for Energy Storage

ANCILLARY FACILITIES

The project would construct a fence surrounding the perimeter of the proposed facilities. Controlled access would be provided at secured gates intersecting the new interior access roads. The fence would be monitored periodically to detect any intrusion into the property. Security lighting would be installed, and signs posted on the fence at regular intervals to provide warning of the high-voltage facilities.

The lighting system would provide operation and maintenance personnel with illumination in both normal and emergency conditions. Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives and would be shielded and oriented to focus illumination on the desired areas, minimizing light spillover. Lights would be motion activated, shielded, and pointed downwards.

Permanent electric service would be obtained for auxiliary loads. Service would be provided by SMUD. Temporary electric service would be obtained for primary construction logistical areas. Generator power may be utilized for temporary portable construction trailer(s) during construction and/or for commissioning.

For communication facilities, the project would utilize telephone and internet services provided via overhead or underground lines, microwave tower, or via cellular service obtained from a local provider. The communication system may include above or below ground fiber optic cable.

Landscaping would be installed and maintained along Dillard Road and Meiss Road. A mix of native plantings would be installed, including live oak thickets and hedgerows planted along the roadways would be used to screen the solar panels from view. Landscaping and entry monumentation would be maintained at the entrance to the project

site and along Dillard Road. This landscaping would consist of very low water use plants such as western redbud, interior live oak, manzanita, buckbrush, California coffeeberry, and an annual grass and wildflower mix. Installed landscaping would receive supplementary drip irrigation, typically for the first three to five years to ensure establishment and facilitate growth and accelerate visual screening. Landscaping features would be monitored to ensure long-term success throughout the project's 35-year lifespan.

Internal access roads would be unpaved with an aggregate base. The internal roadways would comprise approximately 14 acres of the 380 acre-project site (just under 4 percent of the total project footprint).

The project would also include additional facilities such as raw water/fire water storage, fire protection equipment, treated water storage, storm water retention basins, water filtration buildings and equipment, equipment control buildings, and parking.

Construction

At full build-out, most of the project site would be disturbed by construction of the proposed facilities. Temporary construction lay down areas, construction trailers, and parking areas would be provided within the project site in the area shown in Plate PD-6. Finished grades would be within approximately 15 feet of existing grades. The project includes transport of approximately 78,000 cubic yards of graded soil material to an off-site disposal site (Baker-Williams Engineering Group 2022). Fill of some seasonal wetlands identified at the project site is proposed. PV panels would be placed on top of driven piles and soil compaction may be required to support these panels, auxiliary facilities, and project traffic loads.

Construction would take place over approximately eight months. Daily trip generation during construction of the project would be from delivery of equipment and supplies and the commuting of the construction workforce. The number of workers expected on-site during construction of the project would vary over the construction period and would average approximately 150 workers per day. Deliveries of equipment and supplies to the site would also vary over the construction period but would range from 5 to 40 round trips, averaging approximately 10 round trips during the construction period. On-site parking for worker vehicles would be provided during construction. The parking lot would move to adjacent areas as new phases are constructed.

Typical construction work hours are expected to be from 6:00 a.m. to 4:00 p.m. The schedule may change based on a need to comply with various biological mitigation measures, overall construction timing, or worker safety such as avoidance of excessive midday heat. Work at night would be performed occasionally within some areas of the site only if necessary to comply with traffic control permits or weather conditions to meet construction specifications.

Existing farmstead structures would be demolished prior to installation of the solar facilities (refer to Plate PD-4). These structures are located in the northwest portion of the

project site, directly south of Meiss Road. As shown on Plate PD-4, four barn structures would be removed along with an existing house and carport.

Temporary facilities would be developed on-site to facilitate the construction process, including construction trailers, temporary septic systems or holding tanks, parking areas, material receiving / storage areas, water storage facilities, construction power service, and recycling / waste handling areas. These facilities would be located at the construction areas designated on the final site plan.

Construction activities would utilize existing on-site wells during construction; water is required for a variety of construction activities, including dust suppression, earth compaction, the creation of engineered fill, and concrete preparation. Construction-phase water demand would be greatest during site grading which would consist of disc and roll compaction over the site. An estimated total of 178 acre-feet of water would be used for the dust control and other project construction activities (Dudek 2022).

To provide for agricultural grazing activities during project operations, according to the project's *Agricultural Management Plan* (Dudek 2021a) site-specific seeding would occur based on: (1) soil conditions; (2) appropriate grassland species; and (3) dietary preferences of grazing animals. The site would be seeded using seed drills or broadcast seeding followed by light raking. Hydroseeding and hydromulching may also be used depending on the timing and site-specific conditions. Seeding would be completed prior to October 15.

Operation

Upon completion of construction, operations at the site would generate 4 to 10 trips per day for maintenance and security personnel. The facility would be primarily operated remotely through a local solar operations and maintenance company, facilitated by the project SCADA system. To ensure the safety of the public and the facility, the property would be fenced, security lighting installed, and high-voltage warning signs posted. The fence would be monitored periodically to detect any intrusion into the property.

Access to the project site would be from Dillard Road and Meiss Road. Access would be controlled through security gates at several entrances. Multiple gate-restricted access points would be used during construction and operation. The landscape corridor installed along Dillard Road and Meiss Road would be maintained.

Water used during operation would be used primarily for dust control. The project would also use water to wash the solar modules to optimize electrical generation. The annual water consumption required for project operation and maintenance is estimated to be approximately 30 acre-feet per year (Dudek 2022) and would be provided from groundwater as the primary source.

The PV modules and ancillary equipment would be constructed of fire-resistant material. The lighting system would provide operation and maintenance personnel with illumination in both normal and emergency conditions. On-site communications during project

operations would utilize telephone and internet services provided via overhead or underground lines and/or microwave tower or cellular service from a local provider.

Project operations would continue to utilize project site lands for agricultural activities by integrating apiary facilities and/or grazing activities. Landscape maintenance and/or grazing activities would occur to manage vegetation and facilitate use by wildlife.

DECOMMISSIONING AND SITE RESTORATION

The operational life of the facility is approximately 35 years. The project would be decommissioned at the end of its operational life in compliance with Sacramento County's decommissioning requirements. The County requires a decommissioning plan including, but not limited to:

- Description of the proposed decommissioning measures for the facility and for all appurtenances constructed as part of the facility.
- Description of the activities necessary to restore the site to its previous condition.
- Presentation of the costs associated with the proposed decommissioning measures. Discussion of conformance with applicable regulations and with local and regional plans.

The applicant has provided a draft decommissioning plan to achieve these requirements (Dudek 2021b), which is included as Appendix PD-1 to this EIR. During decommissioning, project components that are no longer needed would be removed from the site and recycled or abandoned in place for all underground conductors. Glass and steel that may be recycled would be processed for transportation and delivery to an off-site recycling center. All steel, aluminum, and copper would be recycled, and panels would be recycled in accordance with the PV manufacturer recycling program. The concrete to a minimum of 12 inches below grade, foundation, and parking area would be broken up and removed from the site to an appropriately licensed disposal facility. Transformers using insulating oils would be removed from the site and recycled or disposed of at licensed recycling and disposal facilities. Personnel involved in decommissioning activities would be trained in accordance with applicable regulations.

As part of the preparation for closure, the Spill Containment and Countermeasures Plan for the site would be updated to cover spill prevention and countermeasures for handling these materials during decommissioning. Procedures to decrease the potential for release of contaminants to the environment and contact with stormwater would be specified in a decommissioning Stormwater Pollution Prevention Plan (SWPPP).

Restoration activities would return the project site to pre-existing agriculture use (i.e., livestock grazing), and would include the following:

- Returning the land to agricultural use including increasing the nutrient content at pre-construction levels and aerating the soils through regular tilling.

- Restoration of landform features, vegetative cover, and hydrologic function after closure of the facility. The process would involve replacement of topsoil, brush, rocks, and natural debris over disturbed areas so that the site would support agriculture use (i.e., livestock grazing) or similar useful purposes.
- If soils are determined to be compacted at levels that would affect successful restoration, decompaction would occur. The method of decompaction would depend on how compacted the soil has become over the life of the project.
- A combination of seeding, planting of nursery stock, transplanting of local vegetation within the proposed disturbance areas, and staging of decommissioning activities enabling direct transplanting, would be considered. Native vegetation would be used for revegetating to establish a composition consistent with the form, line, color, and texture of the surrounding undisturbed landscape.

The success of the restoration effort would be based on the development of the target vegetation communities relative to undisturbed reference sites. The reference sites should represent intact, native vegetative communities with similar species composition and conditions that that occurred prior to impacts. Visual inspections would be conducted to document germination, growth, and survival of seeded species, and growth and survival of transplanted succulents. Data collected would include species composition and cover, general size and vigor of the plants, percent live versus dead plants for succulents, observed soil erosion, evidence of wildlife use, and any other information that would be useful in evaluating success. The monitoring program would also include photographic documentation at permanent photo locations.

An estimated total of 178 acre-feet of water would be used for decommissioning activities (Dudek 2022).

Areas of Known Controversy

A Notice of Preparation (NOP) was published on October 22, 2021, that described the proposed project and requested comments on the scope and content of the EIR from public agencies and the general public. During the 30-day NOP comment period, an agency scoping meeting was held on November 3, 2021 and a public scoping meeting held on November 9, 2021. Input received as a result of the NOP and scoping meetings relate to: biological resources, in particular the implementation of the South Sacramento Habitat Conservation Plan (SSHCP), impacts on endangered and threatened species, impacts on vernal pools and seasonal wetlands, drainage, floodplain and hydrology; cultural and tribal cultural resources; land use compatibility; visual impacts; fire risks; and air quality. All written comments received on the NOP are provided in Appendix PD-2 and were used in drafting this EIR.

INTENDED USES OF THE EIR

The EIR is intended to apply to the project approvals listed below, as well as to any other approvals that may be necessary to implement the proposed project. The County of Sacramento is the CEQA lead agency for the project. The Sacramento County Planning Commission and the Board of Supervisors will use the information contained in the EIR in evaluating the proposed project and rendering a decision to approve or deny approvals of the project. County of Sacramento officials and agencies will use the EIR for other County permits and approvals of the project authorized or required by the County code and/or state law. The EIR will also serve as the CEQA document for approvals of the project by other local and state agencies with discretionary authority regarding the project (i.e., Responsible Agencies). Responsible Agencies pursuant to CEQA Guidelines Section 15381 may include, but are not limited to, California Department of Fish and Wildlife, the Central Valley Regional Water Quality Control Board, and SMUD. Federal agencies that may rely on this EIR in taking action on the project include the United States Fish and Wildlife Service, United States Department of Agriculture, and the United States Army Corps of Engineers. The EIR will be used in consultations with Native American tribes regarding cultural resource impacts.

Table PD-3 below includes information required by Section 15124 of the CEQA Guidelines and summarizes the following intended uses of the EIR:

- A list of agencies that are expected to use the EIR in their decision making.
- A list of permits and other approvals required to implement the project.
- A list of related environmental review and consultation requirements required by federal, state, or local laws, regulations, or polices.

Table PD-3: Subsequent Permits, Approvals, Review, and Consultation Requirements

Agency	Approval
Sacramento County Board of Supervisors	Final Environmental Impact Report Certification
Sacramento County Board of Supervisors	Conditional Use Permit (CUP), Special Development Permit and Design Review, Amendment of Dillard solar project CUP, Review of Planning Commission decisions
Sacramento County Planning Commission	Recommendation to the Board of Supervisors regarding CUP, and amendment of existing solar facility CUP, Special Development Permit, Design and Site Plan Review
Sacramento Municipal Utility District (SMUD)	Various Agreements
County of Sacramento Site Improvement Section	Grading Permit or Improvement Plans
Public Works Agency of Sacramento County	Land Grading and Erosion Control Permit
County of Sacramento Building Permits Inspection Division	Building Permits
County of Sacramento Department of Transportation	Encroachment Permit
Sacramento County Environmental Management Department	On-site Wastewater Disposal Permit or Well Certification and Permits
Sacramento Metropolitan Air Quality Management District	Fugitive Dust Prevention and Control Plan
Regional Water Quality Control Board – Central Valley Region	Section 402 National Pollutant Discharge Elimination System Permit Compliance, Waste Discharge Permit, Clean Water Act Section 401 Water Quality Certification; Waste Discharge Requirements; state waters discharge permit
California Department of Fish and Wildlife	Lake and Streambed Alteration Agreement, California Endangered Species Act Take Permit
U.S. Army Corps of Engineers	Clean Water Act Section 404 Permit
U.S. Fish and Wildlife Service	Federal Endangered Species Act Take Permit, Section 7 Consultation
U.S. Department of Agriculture	Approval of long-term financing from the Rural Utilities Service (RUS), an agency of the United States (US) Department of Agriculture (USDA) Rural Development

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3 AESTHETICS

INTRODUCTION

This chapter examines existing viewsheds, existing visual character, and the visual quality of the site and surrounding area. It also examines if new sources of light and glare would affect day or nighttime views in the area. Finally, this chapter evaluates potential aesthetics impacts of the proposed project on the surrounding area.

ENVIRONMENTAL SETTING

VISUAL RESOURCE EVALUATION CONCEPTS AND TERMINOLOGY

Both natural and created features in a landscape contribute to its visual character. Landscape characteristics that influence the visual character include geologic, hydrologic, botanical, wildlife, recreation, and urban features. The basic elements that comprise the visual character of landscape features are form, line, color, and texture. The appearance of the landscape is described in terms of the dominance of each of these elements.

Several sets of criteria have been developed for defining and evaluating visual quality. The criteria developed by the Federal Highway Administration (FHWA) (FHA 1988) and the U.S. Forest Service (USFS) (USFS 1995), which are used in this analysis, include the concepts of vividness, intactness, and unity. According to these criteria, none of these is itself equivalent to visual quality; all three must be considered high to indicate high quality visual resources. These terms are defined as follows:

- "Vividness" is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- "Intactness" is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements.
- "Unity" is the visual coherence and compositional harmony of the landscape considered as a whole.

Viewer sensitivity, also considered in relation to visual quality, depends on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also affected by viewer activity, awareness, and expectations in combination with the number of viewers and the duration of the view. The viewer's distance from landscape elements plays an important role in the determination of an area's visual quality. Landscape elements are considered higher or lower in visual importance based on their proximity to the viewer. Generally, the closer a resource is to the viewer, the more dominant, and therefore visually important, it is to the viewer.

EXISTING VISUAL RESOURCES

The description of the visual character at the project site begins with an overview of the existing landscape characteristics. Next, the relevant key observation points (KOPs) are described in detail and photographs from each KOP, showing the existing conditions, are provided. Plate AE-1 shows the location of each of the key viewpoints. Finally, a description of the visual quality for each KOP is provided. Existing light and glare at the project site and the surrounding area are also briefly described. Visual simulations showing the proposed condition at the project site as viewed from each of the KOPs (2021a) are provided in the section below titled "Impacts and Analysis."

VISUAL CHARACTER AND QUALITY

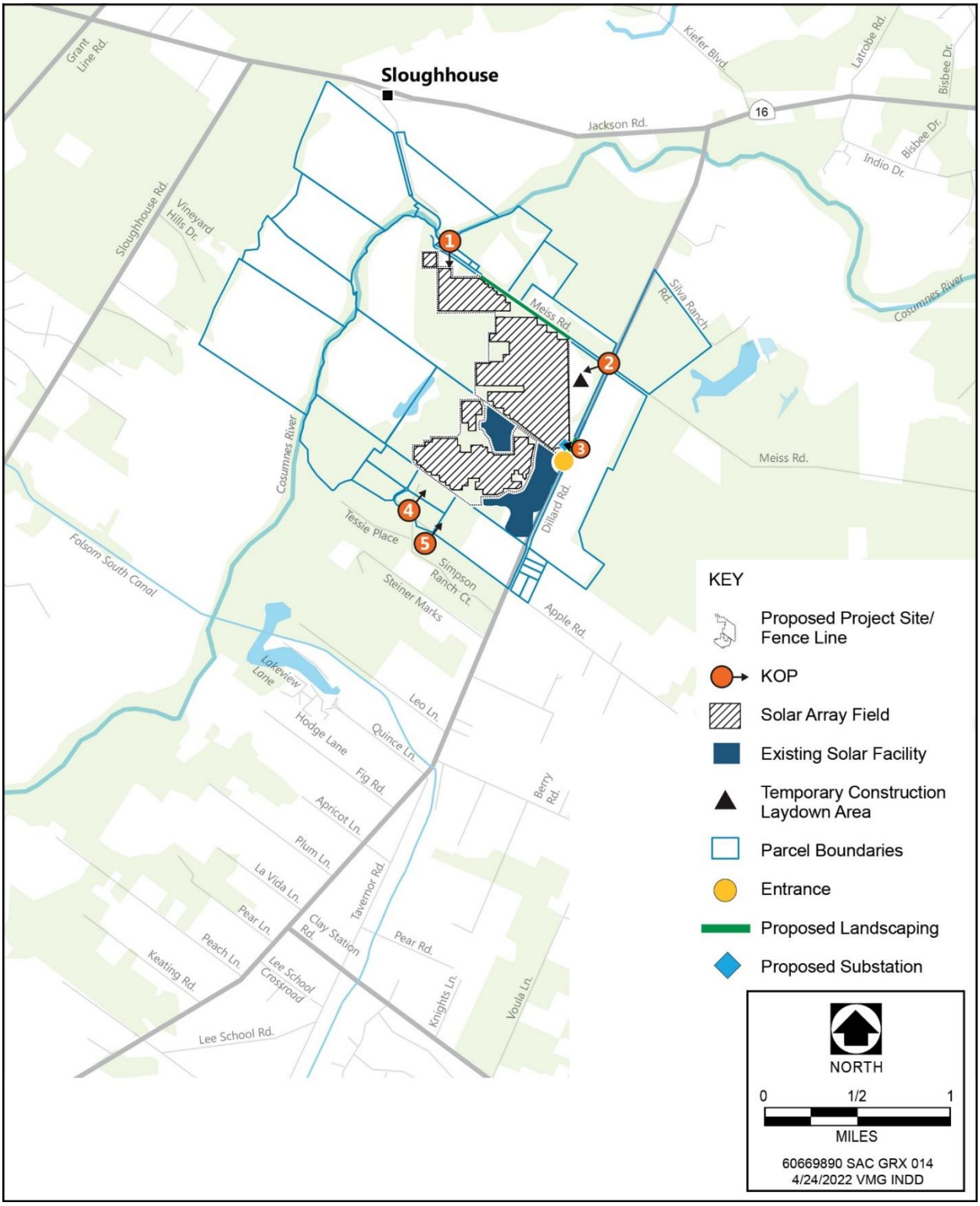
OVERVIEW

The project site consists of gently rolling topography that slopes to the south and west towards a central drainage feature, which in turn flows into an approximately 16-acre off-site pond. The site historically has been used for cattle grazing, along with an area that was cultivated for alfalfa hay (for cattle feed). The distance to the Cosumnes River ranges from approximately 150 feet in the northwest corner of the project site, to more than 0.5 mile in the southwest corner. The project site is not visible from the Cosumnes River due to the height of the intervening earthen levee and vegetation immediately adjacent to the river.

KEY OBSERVATION POINT 1 – WEST END OF MEISS ROAD

Along Meiss Road, the existing visual character consists of rural residential and agricultural land. The west end of Meiss Road is gated, adjacent to the Cosumnes River. Several small rural residences with associated landscaping, fencing, barns, sheds, vehicles, and agricultural equipment are visible on the north and south sides of Meiss Road near the Cosumnes River. South of Meiss Road, the project site includes two large barns and a variety of smaller structures and facilities associated with agricultural operations. A variety of agricultural equipment is also present in this area of the project site south of Meiss Road, including a large center-pivot agricultural irrigation system. A few scattered trees and large shrubs are visible in the vicinity of these structures. Barbed wire fencing is visible around the parcel boundaries. Overhead electrical lines and wood power poles are consistent with other manmade elements of various forms, scales, and colors that dominate the viewshed along Meiss Road, including a variety of fencing types and colors; grey roadway pavement and metal roadway signage; and different sizes and colors of residences, barns, hay storage shelters, sheds, and agricultural equipment. Most of the project site as viewed to the south from Meiss Road appears as flat to gently rolling grazing land (in the foreground and middleground) that is green in the spring and early summer, but brown for most of the year. Black cows are also visible in the foreground and middleground. Tall trees and other shorter vegetation off the project site associated with rural residences and along the Cosumnes River, which are green most of the year but predominately brown in winter, are visible in background views from Meiss Road to the southwest.

Plate AE-1: Key Observation Points (KOPs)



Sources: Dudek 2021a, adapted by AECOM in 2023

Source: Dudek 2021a

Photo Viewpoint KOP 1. Looking Southeast near the West End of Meiss Road. Signage, grasses, shrubs, and fencing along Meiss Road are visible in the foreground. Grassland and a small grouping of shrubs and trees on the project site fill the viewshed in the middleground and background. Overhead power poles along an unnamed interior project site dirt road, as well as shrubs and trees associated with off-site residences to the south, are also visible in the background.

Viewer sensitivity at KOP 1 is high; although there are only a few local residents traveling on Meiss Road or with long-term stationary views of the project site from areas north of Meiss Road, project-related components would be installed in the foreground of the viewshed. Meiss Road is lightly traveled, and dead-ends at the Cosumnes River; there is no recreational river access from Meiss Road. This viewshed exhibits a low degree of vividness and unity, and a moderate degree of intactness; the visual quality is therefore considered low.

KEY OBSERVATION POINT 2 – MEISS ROAD/DILLARD ROAD INTERSECTION

The visual character of the northern portion of the project site and the surrounding area from the Meiss Road/Dillard Road intersection is agricultural in nature. The site appears generally flat from this location, and consists of two landforms: primarily grassland, with a few vertical trees along the Cosumnes River in the background to the west. Low barbed wire fencing in the foreground, and overhead power lines and wood power poles stand out against the skyline along Meiss Road and Dillard Road. Rows of orchard trees are present on the east side of Dillard Road (off the project site), which contribute to the agricultural nature of the surrounding viewshed. One large white multi-story residence with a solid tan privacy wall is visible on the north side of the Meiss Road/Dillard Road intersection, off the project site. From the Meiss Road/Dillard Road intersection, the project site appears as a generally cohesive solid mass of grassland composed of horizontal lines. The vertical elements in the viewshed provided by the off-site trees in the

background provide a pleasing contrast. On the other hand, the vertical power poles and horizontal overhead power lines and fencing in the foreground appear as inharmonious, detracting elements.

Viewer sensitivity at KOP 2 is high, due to the presence of thousands of motorists traveling weekly on Dillard Road (which is an important rural north/south connector between State Route [SR] 16 and SR 99), and the fact that project components would be installed in the foreground of the viewshed. However, this viewshed exhibits a low degree of vividness and unity, and a moderate degree of intactness. Therefore, the visual quality is considered low.

Source: Dudek 2021a

Photo Viewpoint KOP 2. Looking Southwest from the Intersection of Meiss and Dillard Roads. Grass, roadway signage, fencing, and overhead power poles and power lines are visible in the foreground. Grassland at the project site fills the viewshed in the middleground and background, along with a center pivot irrigation system. Trees along the Cosumnes River, west of the project site, are also visible in the background.

KEY OBSERVATION POINT 3 – PROPOSED MAIN ENTRY, DILLARD ROAD

The visual character of the middle portion of the project site and the surrounding area from the proposed main entry at Dillard Road includes a mixture of agricultural and industrial views. To the northwest, the project site appears as flat to gently rolling grasslands, which are green in the spring and brown the rest of the year. Wood power poles and overhead power lines stand out against the skyline along the paved/gravel central entryway to the project site from Dillard Road. The Dillard Road entry is fenced, and includes a double metal locked gate. The existing dirt/gravel roadway leading to the interior of the project site is fenced. Grey metal electrical facilities associated with the existing substation, and rows of grey solar panels associated with the existing off-site

solar generating facility adjacent to and south of the project site, are visible to motorists on Dillard Road. During the fall and winter months, the dark grey solar panels tend to blend in with the existing landscape, whereas in the spring when the grasses are green, the dark grey solar panels tend to become visually dominant. This area of the project site, and the off-site solar panels, generally appear as a series of horizontal lines, and aside from the vertical power poles, the existing landscape elements are of a similar form, scale, and texture.

Viewer sensitivity at KOP 3 is high, due to the presence of thousands of motorists traveling weekly on Dillard Road (which an important rural north/south connector between SR 16 and SR 99), and the fact that project components would be installed in the foreground of the viewshed. However, this viewshed exhibits a low degree of vividness, intactness, and unity. Therefore, the overall visual quality is considered low.

Source: Dudek 2021a

Photo Viewpoint KOP 3. Looking West Near the Proposed Main Entry at Dillard Road. Pavement along Dillard Road, grass, and fencing are visible in the foreground. Grassland at the project site fills the viewshed in the middleground and background to the north and west. Wood power poles and overhead power lines, along with fencing are visible along the existing dirt/gravel entry road from Dillard Road in the foreground and middleground. Solar arrays at the existing off-site solar generating facility are visible to the southwest in the middleground. Trees along the Cosumnes River, west of the project site, are visible in the background.

KEY OBSERVATION POINT 4 – SIMPSON RANCH COURT NORTHWEST

The visual character of the southern portion of the project site and the surrounding area from KOP 4 on Simpson Ranch Court is rural agricultural in nature. Privately owned gently rolling grassland south of the project site merges with the gently rolling grassland at the project site, which is of a similar appearance. The grassland is green in the spring, but brown the rest of the year. A large white agricultural barn with grey metal roofing and

surrounding landscaping, including large trees, is visually prominent in the middleground to the northeast. To the northwest, a newly constructed large white barn with a metal roof (not present at the time the photograph for KOP 4 was obtained), is visually prominent in the middleground to the northwest. Solar panels at the existing solar generating facility to the northeast, adjacent to the project site, are also visible in the middleground. During the bright daylight hours, the panels have a white appearance, which contrasts with the brown grassland and green landscape trees. However, due to the intervening distance (approximately 0.5 mile), the existing solar panels appear small in size and are of a low height. The panels also represent a horizontal line in the landscape, which is similar to the overall nature of the horizontal lines in the surrounding landscape presented by the grassland. Therefore, the existing panels tend to blend in with the viewshed as seen from KOP 4. In the background, vertical elements introduced by green trees along the Cosumnes River provide a pleasing contrast to the grassland. On a clear day, the higher foothills of the Sierra Nevada are also visible in the background.

Source: Dudek 2021a

Photo Viewpoint KOP 4. Looking Northeast from Simpson Ranch Court. Privately owned off-site grassland, along with old off-site fencing to the west are visible in the foreground. The middleground includes on-site and off-site grassland, and a large off-site white metal barn with large landscape trees to the east. The middleground view also includes the existing white/grey off-site solar panels adjacent to the southern portion of the project site (indicated by black arrows). Background views include green trees along the Cosumnes River, and (on a clear day) the higher foothills of the Sierra Nevada.

Viewer sensitivity at KOP 4 is moderate, due to the presence of only a few local residents traveling on Simpson Ranch Court for property access, and the fact that project-related components would be installed in the middleground rather than the foreground of the viewshed for long-term stationary viewers. Simpson Ranch Court, and the adjacent Tessie Place (see Plate AE-1) are lightly traveled, and are dead-end roads that were

installed to provide private property access to approximately 15 parcels. This viewshed exhibits a high degree of vividness and unity, with a moderate degree of intactness. The visual quality is therefore considered high.

KEY OBSERVATION POINT 5 – PRIVATE RESIDENCE, SIMPSON RANCH COURT

The visual character of the southern portion of the project site and the surrounding area from KOP 5 is rural agricultural in nature, and is similar to the viewshed described above for KOP 4. In the foreground, gently sloping brown grassland and several fences on private property, along with an elevated soil berm are visible. A portion of the recently constructed white barn with associated landscaping and power poles, mentioned above in the discussion of KOP 4, is visible to the northwest. Gently rolling brown grassland at the project site, along with white/grey solar panels associated with the existing solar facility adjacent to the southern portion of the project site are visible in the middleground (see white arrows in Photo Viewpoint KOP 5). As noted above for KOP 4, due to the intervening distance and the horizontal nature of the landforms and the solar panels, the off-site solar panels tend to blend in with the viewshed. In the background, vertical elements introduced by green trees along the Cosumnes River provide a pleasing contrast to the grassland. On a clear day, the higher foothills of the Sierra Nevada are also visible in the background. This viewshed exhibits a moderate degree of vividness, unity, and intactness. The visual quality is therefore considered moderate.

Source: Dudek 2021a

Photo Viewpoint KOP 5. Looking North from Private Residence on Simpson Ranch Court. Fencing, young grape plants, and support post for the vines associated with the private residence at KOP 5 are visible in the foreground, along with brown grassland. The middleground includes off-site grassland, fencing, an elevated soil berm, and a residence with landscaping and power poles to the east. The middleground view also includes brown grassland at the project site, and off-site white/grey solar panels adjacent to the southern portion of the project

site (indicated by white arrows). Background views include green trees along the Cosumnes River, and (on a clear day) the higher foothills of the Sierra Nevada.

LIGHT AND GLARE

Nighttime lighting and glare can create issues for motorists when driving. In addition, nighttime lighting can create "skyglow," which results in an artificially bright nighttime sky from man-made lighting, which obscures views of the stars. Daytime glare can result in hazards for nearby motorists and for airplane pilots following low-level flight paths to nearby airports. Information related to existing nearby airports is provided below for context related to the glare analysis.

The project site generally is undeveloped except for an existing farmstead in the northwest corner consisting of a residence and multiple barns and storage sheds. The residence and barns include minor exterior lighting at the doorways. Minor exterior nighttime security lighting is present adjacent to the project site at existing off-site residences and the off-site electrical station associated with the existing solar facility.

Minor existing sources of glare at the project site are present in the form of metal roofs on the large barn and nearby agricultural storage structures in the northwest corner. The adjacent off-site solar farm project, immediately adjacent to the project to the south, includes approximately 63 acres of south-facing solar panels that generate daytime glare.

Mather Airport is approximately 7.3 miles northwest of the project site. Mather Airport has a control tower, two asphalt/concrete runways that are approximately 11,300 and 3,500 feet long, respectively, along with two helipads. The runways and helipads are lighted. Mather Airport was formerly a military facility (Mather Air Force Base), which was decommissioned and is now a County-owned and operated public use airport. In 2018, there were 52 aircraft based at the field, and there were approximately 272 flights per day averaged over the 12-month period. Mather Airport accommodates large transport planes and high-performance military T-38 jets (AirNav 2021a).

There are also two smaller local airports in the project vicinity: Rancho Murieta Airport (approximately 3.5 miles to the northeast), and the Sky Way Estates Airport (approximately 4.6 miles to the southwest). Rancho Murieta Airport is a privately owned, public use airport. It does not have a control tower, but airport staff are in attendance from 8:00 a.m. to 5:00 p.m. daily. Rancho Murieta Airport has two lighted asphalt runways that are approximately 3,800 feet and 1,150 feet long, respectively. In 2018, there were 22 aircraft based at the field, and there were approximately 86 flights per day averaged over the 12-month period (AirNav 2021b). Sky Way Estates Airport is privately owned and operated, and requires permission prior to landing (i.e., Sky Way Estates is not a public use airport). There is one 1,950-foot-long asphalt runway and there are 8 aircraft based at the field (AirNav 2021c). The Sky Way Estates Airport does not have a control tower and the runway is not lighted, and there are no airport staff present in attendance.

DESIGNATED SCENIC ROADWAYS

The Department of Transportation (Caltrans) manages the State Scenic Highway Program and assists local communities seeking to officially designate state scenic

highways (Caltrans 2018). In addition, Sacramento County has designated certain roadway segments as scenic highways or scenic corridors as part of its General Plan (Sacramento County 2020).

There are no designated or eligible state scenic highway adjacent to or in the vicinity of the project site. The nearest State-designated highway is SR 160 (River Road), is approximately 17 miles to the west. SR 49, approximately 16.5 miles east of the project site, is eligible for designation. SR 160 is also designated as a County Scenic Highway. Due to the intervening distance and topography, the project site is not visible from either of these roadways.

REGULATORY SETTING

FEDERAL

FEDERAL AVIATION REGULATIONS, PART 77

Federal Aviation Regulations (FAR) (U.S. Code Title 14) Part 77, "Safe, Efficient Use, and Preservation of the Navigable Airspace" has been adopted as a means of monitoring and protecting the airspace required for safe operation of aircraft and airports. Part 77 recognizes that certain safety hazards to aircraft and airport operations may occur where a land use would, among other criteria, reflect light or generate electronic interference.

Part 77 establishes the following:

- the requirements to provide notice to the Federal Aviation Administration (FAA) of certain proposed construction activities, or the alteration of existing structures;
- the standards used to determine obstructions to air navigation, and navigational and communication facilities; and,
- the process for aeronautical studies of obstructions to air navigation or navigational facilities to determine the effect on the safe and efficient use of navigable airspace, air navigation facilities, or equipment.

STATE

PUBLIC USE AIRPORTS AND AIRSPACE REGULATION

The state regulates airports under the authority of the Airport Land Use Commission (ALUC) Law, Section 21670 et seq. of the California Public Utilities Code (PUC). This law is implemented through individual ALUCs, which are required in every county with a public use airport or with an airport served by a scheduled airline. Under the provisions of the law, each ALUC has certain responsibilities conferred upon it and specific duties to perform. Among these are preparing an airport land use plan for each airport within its jurisdiction (PUC Sections 21674[c] and 21675[a]). State law gives the Caltrans Division of Aeronautics and local agencies the authority to enforce the FAA standards at public use airports.

Private Use Airports and Airspace Regulation

Private use airports (such as Sky Way Ranch) are not regulated by the FAA; instead, they are regulated at the state level. In California, a State Airport Permit is required to operate most private airports. State Airport Permit requirements are promulgated in PUC Section 21001 et seq. (otherwise known as the State Aeronautics Act), and California Code of Regulations (CCR) Title 21, Sections 3525-3560, Airports and Heliports. Permits are obtained from the Caltrans Division of Aeronautics, which considers several following factors during the permit application process, including the following:

- The airport site must meet or exceed the minimum airport standards specified by the Division in its rules and regulations.
- Safe air traffic patterns must be established for the proposed airport, and all existing airports and approved airport sites in the vicinity of the proposed airport.
- Safe "zones of approach" for the airport must be engineered in conformity with the provisions of PUC 21403 (i.e., provides for lawful emergency landings at private airports and requires the airport to be designed in accordance with FAR Part 77, "Objects Affecting Navigable Airspace").

Local

Sacramento County Airport Land Use Commission

The Sacramento County ALUC has adopted FAR Part 77, "Safe, Efficient Use, and Preservation of the Navigable Airspace" (see the description of Federal airspace safety regulations, above) for protection of persons in the air and on the ground related to airport safety.

Mather Airport

The latest update to the Mather Airport Land Use Compatibility Plan (ALUCP) (ESA 2020) was adopted by the Sacramento County Association of Governments, which serves as the Sacramento ALUC, in 2020. The Airport Influence Area (AIA) represents the geographic extent of the ALUC's authority and the applicability of the ALUCP noise, safety, airspace protection, and overflight notification policies and compatibility criteria. The northwest corner of the project site is adjacent to, but just outside of, the Mather Airport AIA Review Area 2, which includes airspace protection and overflight notification areas. Mather Airport ALUCP policy AP-6, contains the following restrictions related to "Other Flight Hazards", among others, in Review Area 2 of the AIA (ESA 2020:4-46):

- Land uses that may cause visual hazards; and
- Sources of glare (such as from mirrored or other highly reflective buildings or building features) or bright lights (including search lights and laser light displays).

Rancho Murieta Airport

Land use compatibility for the Rancho Murieta Airport is determined by the Sacramento ALUC's Airport Land Use Policy Plan (Sacramento ALUC 1992). The ALUC Airport Land

Use Policy Plan for the Rancho Murieta Airport includes an "airport safety restriction area" composed of the clear zone, the approach-departure zone, and the overflight zone. Within the airport safety restriction area, the Airport Land Use Policy Plan indicates that where land uses would result in any of the following conditions, such land uses constitute hazards to air navigation: attraction of large concentrations of birds within approach–climbout areas, smoke production, flashing lights, light reflection, electronic interference, and use or storage of large quantities of flammable materials (Sacramento ALUC 1992:26).

The Rancho Murieta Airport Land Use Policy Plan, Policy 2(b)(2) further states that any use that would cause sunlight to be reflected toward an aircraft engaged in an initial straight climb following take-off or toward an aircraft engaged in a straight final approach toward a landing is considered incompatible in both the Clear Zone and the Approach/Departure Zone (Sacramento ALUC 1992:27):

The airport safety restriction area for Rancho Murrieta Airport extends in an arc approximately 5,000 feet from the runway. The project site is approximately 2.5 miles west of the airport's safety restriction area.

SKY WAY ESTATES AIRPORT

Because the Sky Way Estates Airport is a small private-use airport, a land use compatibility plan or land use policy plan is not required.

SACRAMENTO COUNTY GENERAL PLAN

The *Sacramento County General Plan of 2005–2030* (Sacramento County 2020) includes the following policies related to aesthetics that apply to the proposed project.

LAND USE ELEMENT

LU-31. Strive to achieve a natural nighttime environment and an uncompromised public view of the night sky by reducing light pollution.

PUBLIC FACILITIES ELEMENT

PF-78. Large multi-megawatt solar and other renewable energy facilities should be sited at locations that will minimize impacts. The following guidelines should be considered, though is it [sic] recognized that each project is different and must be analyzed individually, and that other factors may affect the suitability of a site. Locational criteria for wind turbines should be determined on a case-by-case basis and referred to the Sacramento County Airport System and the FAA for review and comment.

- Desirable sites are those which will minimize impacts to county resources and will feed into the electrical grid efficiently, including:
    - Lands with existing appropriate land use designations, e.g., industrial.

- Brownfield or other disturbed properties (e.g., former mining areas, mine tailings) or land that has been developed previously and has lost its natural values as open space, habitat or agricultural land.
- Sites close to existing facilities necessary for connection to the electrical grid to minimize the need for additional facilities and their impacts, and to improve system efficiency.

- Other sites may be used for siting renewable energy facilities after consideration of important natural and historic values of the land, including:
  - Farmlands. Site on farmlands of the lowest quality, e.g., land classified by the Department of Conservation as "other land" or "grazing land", then consider farmlands of local, unique or statewide importance. Avoid high-quality farmlands, especially land classified by the Department of Conservation as prime and lands under active Williamson Act contracts.
  - Habitat and Other Open Space Lands. Site on lands with the lowest habitat and open space values, and consider how a site will affect conservation planning, e.g., the Conservation Strategy in the South Sacramento Habitat Conservation Plan. Avoid areas containing vernal pool complexes and associated uplands.
  - Scenic Values. Site in areas of lowest scenic values and avoid visually prominent locations e.g., ridges, designated scenic corridors and designated historic sites.
  - Cultural Resources. Site in areas that are known to have limited potential for containing cultural resources. Otherwise, avoid sites with known cultural resources.

PF-80. Locate solar facilities, and design and orient solar panels in a manner that addresses potential problems of glare consistent with optimum energy and capacity production.

PF-85. To minimize visual impacts and protect the county's visual and aesthetic resources new bulk substations should be located in industrial and non-retail commercial areas when possible. To further minimize visual intrusion and potential land use conflicts, substations shall be enclosed with site-appropriate security fence in concert with a landscaped setback along all public street frontages.

CONSERVATION ELEMENT

CO-94. Development within the 100-year floodplain and designated floodway of Sacramento streams, sloughs, creeks or rivers shall be:

- Consistent with policies to protect wetlands and riparian areas; and
- Limited to land uses that can support seasonal inundation.

CO-105a. Encourage flood management designs that respect the natural topography and vegetation of waterways while retaining flow and functional integrity.

CO-113. Encourage revegetation of native plant species appropriate to natural substrate conditions and avoid introduction of nonindigenous species.

CIRCULATION ELEMENT

CI-65. Incorporate Low Impact Design (LID) techniques to the greatest extent feasible to improve water quality runoff and erosion control, infiltration, groundwater recharge, visual aesthetics, etc. LID techniques may include but are not limited to:

- Bioretention techniques, such as filtration strips, swales, and tree box filters
- Permeable hardscape
- Green roofs
- Erosion and sediment controls
- Reduced street and lane widths where appropriate

SACRAMENTO COUNTYWIDE DESIGN GUIDELINES

The *Sacramento Countywide Design Guidelines* (Sacramento County 2022) were adopted to promote high quality, sustainable, and healthy community design. The objectives of the Guidelines, in conjunction with the County's Design Review Program, are to: achieve high standards for the quality of the built environment, advance sustainable development, and provide business and user-friendly practices. The guidelines also incorporate sustainability practices that include green building and construction which can facilitate sustainability by generating jobs; and increasing energy efficiency, water conservation, and air quality and waste reduction. Chapter 5 of the Guidelines presents office, business park, institutional, and industrial design guidelines that apply to the proposed project (i.e., a solar power generation project). As part of the project permitting and design review process, project applicants are required to complete and submit to the County a supplemental form related to the design concepts presented in the Guidelines. The project applicant must provide design information related to the following (Sacramento County 2022):

- Site Context: How can site planning provide pedestrian and vehicular connections between buildings in and outside the project? What other safety elements should be included?
- Building Alignments: What are the building edge and spatial relationships among groups of buildings? What is the orientation of building lobbies and entries?
- Streetscape and Landscape Design: What type of landscaped setbacks and treatments exist along public streets? What landscaping needs replacement? How can the landscape plan be enhanced to attract pedestrians and promote walking? How can the landscape help to improve the environment?

- Roadway and Parking Lot Design: How can parking lots and driveways be designed to increase connectivity and safety for pedestrians, people with disabilities, and bicyclists in the business district or neighborhood? How can trees and cool, permeable pavements be used to reduce heat generated by parking lots?
- Architectural Context: What are the strongest architectural features in the business district or neighborhood and how can the project complement these themes or ideas?
- Signage Design: How can an overall signage concept contribute to the graphic identity of the project and the business district setting?

The Design Guidelines provides detailed objectives and guidelines related to the following:

- roadway design and streetscapes;
- parking and loading areas;
- building setbacks and alignments;
- integrated transit;
- landscaping/site elements;
- architectural design (including architectural elements, building massing, and landscaping);
- materials and colors;
- lighting;
- screen walls and security fences; and
- signage.

Sacramento County Zoning Code Sections 3.6 and 6.3

Sacramento County Zoning Code Section 3.6.6.C, Solar Energy Facilities, sets forth the allowable standards for commercial solar facilities that apply to the proposed project. The standards state that commercial solar facilities should be located to avoid the viewscapes of scenic highways or areas that would affect the views from historic places (Section 3.6.6.C.3.c). Solar facilities are not allowed where it has been determined the facility would adversely affect airport flight operations. Security fencing for commercial solar facilities is required and must be either: (1) vinyl covered cyclone fence, using neutral colors, or (2) vinyl slats, using a neutral color compatible with the fence color, or (3) alternative fencing that may be considered by the approving body (Section 3.6.6.C.3.e).

Landscaping requirements pertaining to commercial solar facilities are contained in Section 3.6.6.C.3.f, as follows:

(i) The applicant shall submit a landscape plan to Planning and Environmental Review which shall include the location, description and timing of plantings, fences, sound walls as required by the Code, and berms. The description of

fencing shall include color and materials, when appropriate. The landscaping plan shall be designed to be generally compatible with the surrounding uses and existing landscaping patterns, to the satisfaction of the Landscape Architect, Planning and Environmental Review.

(ii) In rural areas, the following shall be considered when approving the landscape plan:

1) Maintenance of visual openness and the preservation of rural character through design that may include clustering of plant species;

2) Protection of watering systems and/or landscaping from theft; and

3) Availability of water source.

(iii) Landscaping shall be designed to bring immediate aesthetic relief upon planting by designating minimum sized plantings appropriate to the project and its surroundings.

(iv) Landscaped areas shall be kept free of trash and weeds.

Sacramento County Zoning Code Section 6.3, Design and Site Plan Review, sets forth the provisions of the County's Design Review Program, in which discretionary and non-discretionary projects are reviewed to determine a project's compliance with the Countywide Design Guidelines (Sacramento County 2022). Most commercial, industrial, residential, mixed-use, institutional, or public works projects, regardless of zoning district, requiring discretionary entitlement(s) or approval(s) are subject to the Design Review Program, including solar energy facilities such as the proposed project. As stated in Section 6.3 of the Zoning Code Section, the purpose of the Design Review Program is to:

1. Create a sense of place in Sacramento County's new growth areas, mixed-use, commercial, business, multifamily, and single-family residential districts;
2. Create a mix of uses and activities that create a healthy, social, livable, sustainable and economic environment for the diverse communities and commercial corridors in Sacramento County;
3. Create mixed-use, commercial, business, multifamily, and single-family residential districts that are designed to promote the health, safety and convenience of the pedestrian and provide active design and transportation choices that include multiple modes (walking, bicycling and transit);
4. Support the goals of the General Plan;
5. Preserve and enhance environmental quality;
6. Promote high quality design and active communities; and
7. Promote compatibility and increased connectivity between new development and surrounding development.

For discretionary projects, the Design Review Advisory Committee (DRAC) conducts design reviews and makes findings and recommendations to the approving authority regarding compliance with the County-wide Design Guidelines. The DRAC does not have

final authority over projects and serves in an advisory and technical guidance capacity to the approving authority (Zoning Code Section 6.3.2.E.2).

The appropriate approving authority is required to make one of the following findings (Zoning Code Section 6.3.2.F):

1. The project substantially complies with the County-wide Design Guidelines;
2. The project would substantially comply with the County-wide Design Guidelines if modified with recommended modifications; or
3. The project does not comply with the County-wide Design Guidelines and should, as consequence, not be approved.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

Based on Appendix G of the State California Environmental Quality Act (CEQA) Guidelines, the proposed project would have a significant impact related to aesthetics if it would:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings, within a state scenic highway;
- except as provided in Public Resources Code Section 21099, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality; or
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

ISSUES NOT DISCUSSED FURTHER

Substantial Adverse Effect on a Scenic Vista—A scenic vista is a public viewpoint that provides expansive views of highly valued scenery or landscapes. Sacramento County (2020) has not designated any scenic vistas at the project site or the surrounding lands. The project site consists of flat to gently rolling agricultural grazing land with fencing, which is brown for most of the year and does not contain any unique geologic features, waterfalls, rock outcroppings, gorges, mountains, large stands of native trees, or other features that could be regarded as outstanding scenic features. Views of the grazing land at the project site from the surrounding area are typical of rural agricultural land throughout Sacramento County. The project site does not contain or include any scenic vistas. Thus, there would be **no impact**, and this issue is not evaluated further in this EIR.

Scenic Resources within a Designated Scenic Highway—There are no designated or eligible state scenic highways adjacent to or in the vicinity of the project site. The nearest State- and County-designated highway is SR 160 (River Road), approximately 17 miles to the west, and the nearest eligible state scenic highway is SR 49, approximately 16.5 miles to the east. The project site is not visible from either of these roadways. Therefore, development of the project site would not affect scenic resources within a State- or County-designated scenic highway. Thus, there would be **no impact**, and this issue is not evaluated further in this EIR.

IMPACT AE-1: SUBSTANTIALLY DEGRADE THE EXISTING VISUAL CHARACTER OR QUALITY OF THE PROJECT SITE

Buildout of the proposed project would convert 380 acres of undeveloped, rural land used for cattle grazing to solar facility uses, resulting in a visual change. The existing visual quality of the project site is moderate to low. As demonstrated by visual simulations and substantiated by the discussion that follows, most views of the proposed facilities would either blend into the existing landscape, or would be screened by proposed landscaping. The visual appearance of spring grazing, which is proposed as part of the project (see Chapter 2, “Project Description”), would be similar to existing cattle grazing. A substantial degradation of the existing visual character and quality from Meiss Road and Dillard Road could occur if the landscape plantings intended to screen the facility from these viewpoints failed to establish, but this impact would be reduced to **less than significant with mitigation**.

The project site is situated in a rural area consisting primarily of farmland, with a few rural residences on large lots. For the proposed project, approximately 380 acres of existing livestock (cattle) grazing land would be converted to new solar generating facilities. Most of the project site would consist of pole-mounted solar panel arrays. In addition, an electrical substation, battery storage buildings, internal roadways, chain link fencing and gates, and potentially other ancillary facilities, would be developed. The conversion from open grassland to solar generating facilities would represent a visual change. Visual simulations for each of the KOPs described previously in “Environmental Setting,” were performed by Dudek in 2021 (Dudek 2021a). These visual simulations are presented and described below.

VISUAL SIMULATION – KOP 1

Source: Dudek 2021a

Visual Simulation Viewpoint KOP 1. Looking Southeast near the West End of Meiss Road. Proposed hedgerow plantings (black arrow) would screen most of the solar arrays from Meiss Road and residences to the north. A portion of the proposed solar panels that would still be visible from Meiss Road are indicated by the grey arrow.

At full buildout, views to the southeast from Meiss Road would change from open grassland in the middleground and foreground, to a tall green hedgerow planting. As described in Chapter 2, "Project Description," the proposed project would include a hedgerow planted adjacent to and north of the solar arrays along Meiss Road (Garth Ruffner Landscape Architect 2021). This landscaping would include live oak trees and tall, mixed native shrubs that would, over time, create a hedgerow that would screen the solar arrays from south-facing views of motorists traveling on Meiss Road and local residents north of the project site (see the black arrow in Visual Simulation Viewpoint KOP 1). These plantings would be drip-irrigated during the first three to five years to ensure establishment, and since they are native species, would not require supplemental water after this period in order to achieve a projected 80% survival rate (Garth Ruffner Landscape Architect 2021). An area of proposed solar arrays that would not be screened by the proposed hedgerow is also visible in Visual Simulation Viewpoint KOP 1 (grey arrow). The proposed solar arrays and associated hedgerow planting south of Meiss Road would be approximately 200 feet from KOP 1, and therefore would be highly visible in the foreground to local motorists and residents. The green hedgerow would substantially screen the grey/white metal solar arrays from view within approximately five years after planting occurs. A strong horizontal line would be created in the landscape close to the viewer, which would block middleground and background views. The

hedgerow planting would be similar in appearance to the surrounding vegetation along Meiss Road and adjacent to nearby residences.

VISUAL SIMULATION – KOP 2

Source: Dudek 2021a

Visual Simulation Viewpoint KOP 2. Looking Southwest from the Intersection of Meiss and Dillard Roads. Proposed solar arrays (black arrows) would be visible in the middleground as a low, grey, horizontal line. The proposed hedgerow planting along Meiss Road would be visible as a low, green, horizontal line in the middleground (grey arrow). The tops of trees along the Cosumnes River, west of the project site, would be visible in the background.

During the project's construction and decommissioning phases, construction equipment, personnel, and materials storage would be visible in the foreground from KOP 2. However, those views would be short-term and temporary, and all construction equipment and materials storage would be removed at the end of the construction and decommissioning phases, and this area would be reseeded either with native vegetation or with grasses suitable for grazing.

At full buildout during the project's operational phase, foreground views from the Meiss Road/Dillard Road intersection would be unchanged. However, views of grassland in the middleground and background would be replaced by views of solar arrays and a portion of the proposed hedgerow planting. The proposed solar arrays southwest of the Meiss Road/Dillard Road intersection would be approximately 1,050 feet from motorists at KOP 2. As shown in Visual Simulation Viewpoint KOP 2, the solar arrays would be visible to motorists as a long, low grey line across the horizon in the middleground. During the summer, fall, and winter months when the surrounding grassland is brown, the solar arrays would stand out more prominently. In the spring when the grassland is green, the solar arrays would tend to blend in more with the existing viewshed. The proposed green

hedgerow south of Meiss Road would be visually similar to existing vegetation further west and north of Meiss Road. The tops of trees along the Cosumnes River, west of the project site, would still be visible in background views.

VISUAL SIMULATION – KOP 3

Source: Dudek 2021a

Visual Simulation Viewpoint KOP 3. Looking West Near the Proposed Main Entry at Dillard Road. Proposed landscaping at the project entry, visible in the foreground, would screen most of the proposed battery storage buildings, the proposed substation, and some of the proposed solar arrays from the viewpoint of motorists traveling on Dillard Road. Portions of the proposed perimeter chain link fencing would be visible at the entry, and along the project perimeter adjacent to Dillard Road in the foreground. The solar arrays visible in the middleground at the left side of this visual simulation are part of an existing, off-site solar generating facility. Views of the tops of trees along the Cosumnes River west of the project site would be blocked by the proposed facilities.

At full buildout, foreground views of the project site from the proposed entry at Dillard Road would change from open grassland to landscaping, metal buildings, and solar arrays. Middleground and background views would change from grassland to solar arrays, but these views would be blocked by proposed solar facilities closer to Dillard Road. As described in Chapter 2, “Project Description,” the proposed project would include landscape plantings adjacent to and north of the main project entry along Dillard Road, for a distance of approximately 500 feet (Baker-Williams Engineering Group 2021b). This landscaping would consist of very low water use plants such as western redbud, interior live oak, manzanita, buckbrush, California coffeeberry, and an annual grass and wildflower mix. The landscaping would be drip-irrigated during the first three to five years to ensure establishment, and since they are native species, would not require supplemental water after this period in order to survive. The chain link fencing behind the landscaping would be vinyl clad in a brown color. The remaining chain link fencing around the perimeter of the project site would be black vinyl clad. The black and brown vinyl

cladding would help to make the fencing less conspicuous in the landscape. After approximately five years, the proposed landscaping along the north side the project entry would screen most of the proposed battery storage buildings, the proposed substation, and some of the solar arrays from the viewpoint of motorists traveling on Dillard Road, for a distance of 500 feet north of the entry (see Visual Simulation Viewpoint KOP 3). The nearest proposed solar array would be approximately 380 feet to the northwest of KOP 3. Views of the tops of trees along the Cosumnes River west of the project site would be blocked by the proposed facilities. (Note that landscaping is not proposed on the south side of the Dillard Road project entry because this property consists of an existing solar generating facility owned by another entity, and therefore is not part of the proposed project.)

VISUAL SIMULATION – KOP 4

Source: Dudek 2021a

Visual Simulation Viewpoint KOP 4. Looking Northeast from Simpson Ranch Court. Foreground views of privately-owned, off-site grassland would not change. Middleground views of the project site would change from grassland to grey solar arrays. Background views of trees and (on a clear day) the higher foothills of the Sierra Nevada, would not change.

At full buildout, foreground and background views from the northern portion of Simpson Ranch Court would not change. However, middleground views of grassland would be replaced with views of grey solar arrays. The proposed solar arrays would be approximately 1,500 feet north of KOP 4. As shown in Visual Simulation Viewpoint KOP 4, the solar arrays would be visible as distinctive grey/black panels throughout the left side of the viewshed in the middleground. During the summer, fall, and winter months when the surrounding grassland is brown, the solar arrays would stand out more prominently; in the spring when the grassland is green, the solar arrays would be

somewhat less prominent. In relationship to the surrounding landscape elements, the arrays would be of a low height, and therefore would not block existing background views of the Sierra Nevada.

VISUAL SIMULATION – KOP 5

Source: Dudek 2021b

Visual Simulation Viewpoint KOP 5. Looking North from Private Residence on Simpson Ranch Court. Foreground and middleground views of privately owned, off-site grassland would not change. Further middleground views of the project site would change from grassland to grey solar arrays. Background views of trees and (on a clear day) the higher foothills of the Sierra Nevada, would not change.

Under CEQA, an evaluation of a project's potential visual change as viewed from private property is not required. Nevertheless, for purposes of full disclosure, the project applicant has elected to provide a comparison of a viewshed change from the surrounding private residences. The viewshed change for residents north of Meiss Road is described above as related to Visual Simulation Viewpoints KOP 1 and KOP 2. Visual Simulation Viewpoint KOP 5 is south of the project site, on Simpson Ranch Court, where access was granted onto this private property to obtain a photograph from the back of the residence looking north at the project site. There are two other residences on the north side of Simpson Ranch Court that would have similar views to the north at a similar distance and elevation: one existing home is east of KOP 5, and one home is under construction to the west of KOP 5. As shown in KOP 5, foreground and background views from this private residence on Simpson Ranch Court would not change. However, middleground views of grassland would be replaced with views of grey solar arrays. The proposed solar arrays would be approximately 2,300 feet north of KOP 5. As shown in Visual Simulation Viewpoint KOP 5, the solar arrays would be visible from the back of this residence on Simpson Ranch Court as dark grey/black panels in the middleground. The two other private residences

immediately east and west of KOP 5 would have similar views at similar distances and elevations. Views of the project site from the residences south of Tessie Place are blocked by the intervening topography and existing intervening residences with associated landscaping. North-facing views of the project site from one of the residences further west on Simpson Ranch Court are blocked by that resident's private array of pole-mounted solar panels, which encompass approximately 6,000 square feet and are clearly visible in the foreground for local motorists traveling on Simpson Ranch Court. Although the project's solar arrays would be visible, they would not stand out in the landscape due to their dark grey coloring and low height. During the summer, fall, and winter months when the surrounding grassland is brown, the solar arrays would stand out more prominently; in the spring when the grassland is green, the solar arrays would be somewhat less prominent. In relationship to the surrounding landscape elements, the arrays would be of a low height, and therefore would not block existing background views of off-site trees or the Sierra Nevada from KOP 5.

There are additional other private residences to the northwest of KOP 5 at the end of Simpson Ranch Court, which is a dead-end road (12500 and 12501 Simpson Ranch Court). These residences are situated at a similar topographic elevation as compared to KOP 5, but the proposed photovoltaic (PV) arrays would be substantially closer—approximately 375 to 500 feet north of these two residences. The topography at the southwestern edge of the project site is approximately 30 feet lower than the residences, and the height of the pole-mounted PV arrays would be approximately 12 feet above the ground surface. Therefore, the PV arrays at the southwestern end of the project site would be approximately 18 feet lower in elevation, at a distance of approximately 375 to 500 feet. Further to the northwest within the project site, as the distance from these two residences increases, the topography within the project site is gently rolling, but still below the level of the residences for a distance of approximately 0.5 mile. Near the project's proposed access road, at a distance of just over 0.5 mile, the elevation becomes similar to these two residences on Simpson Ranch Court. Because these two residences are comprised of private property, it was not possible to prepare a visual simulation. However, based on the topography and distances to the proposed PV arrays, the visual character of foreground and middleground views from 375 to 500 feet north (at the southern edge of the project site) of these two residences would change substantially from undeveloped grassland (i.e., cattle grazing land) to multiple horizontal lines of pole-mounted grey/black PV panels. The westernmost residence at 12500 Simpson Ranch Court would still have partial foreground views (to the northwest) of undeveloped grassland. However, foreground views from the residence at 12501 Simpson Ranch Court would be composed entirely of PV arrays. Middleground views from these two residences to the north would also change from undeveloped grassland to PV arrays, but middleground views to the northwest would remain unchanged (i.e., undeveloped grassland, a 16-acre pond, green agricultural fields, and trees along the Cosumnes River). Background views of trees along the Cosumnes River to the northwest and (on a clear day) the Sierra Nevada foothills to the north, would not change. The change in visual character of the foreground and middleground views from these two residences at 12500 and 12501 Simpson Ranch Court to the north would represent a substantial degradation of the existing visual character.

There are two other residences approximately 1,400 feet south and 1,200 feet west of the proposed PV arrays. These residences are approximately 20 feet lower topographically as compared to the proposed PV arrays. Foreground views from these residences would not change. Middleground views would change from undeveloped grassland to the black, low, horizontal lines of the pole-mounted PV arrays. Middleground views to the north and east from these two residences would be similar to the views show in KOP 4, as related to topography, distance, line, form, and color. Middleground views to the south and west from these two residences would be unchanged.

Finally, there is one residence approximately 1,500 feet southeast of the project site, which is accessed via Dillard Road. Views to the north/northwest of the proposed PV arrays from this residence would be substantially blocked by existing large agricultural barns and landscaping around the residence and barns on this private property.

Compatibility with Regulations, Plans, and Policies Related to Aesthetics

The County General Plan Conservation and Circulation Elements (Sacramento County 2017, 2020) contain several policies that promote the conservation of visual resources and establish County design principles, including Policies CO-94, CO-105a, CO-106, CO-112, and CO-113. These policies relate to project location, appearance, and design in relation to existing drainageways and floodplains, and require reseeding at project completion with native vegetation. As shown in the grading plans prepared by Baker-Williams Engineering Group (2021a), proposed grading would follow the existing land contours, and only a small portion of the proposed facilities would be located within a 100-year floodplain. Per the project's Agricultural Management Plan (Dudek 2021b), grassland would be maintained underneath the panels for grazing. In addition, General Plan Policy CI-65 encourages the incorporation of LID techniques to the greatest extent feasible, in part to improve visual aesthetics. New concrete-lined drainage channels would not be created; instead, the project would utilize the existing natural topography and existing natural drainageways, which flow south and west.

The project is required to incorporate appropriate design elements from the *Countywide Design Guidelines* (Sacramento County 2022). Furthermore, the proposed project is also required to undergo the County's Design Review Process as set forth in County Zoning Code Section 6.3. The Design Review Process is intended to promote high-quality design along with compatibility and increased connectivity between new development and surrounding development. After the Design Review Process is completed, the Planning Commission is required to make one of the following findings (Zoning Code Section 6.3.2.F):

- the project substantially complies with the Countywide Design Guidelines;
- the project would substantially comply with the Countywide Design Guidelines if modified with recommended modifications; or
- the project does not comply with the Countywide Design Guidelines and should, as consequence, not be approved.

Impact Conclusion

As shown in the visual simulations for KOPs 1 and 3, the project applicant would provide appropriate visual screening, in the form of landscaping, at the foreground locations where the proposed solar facilities would be closest to the public viewers along Meiss Road and at the project entry from Dillard Road. In addition, the perimeter chain link fencing, which also would be visible in the foreground for these viewers, would be coated with either brown or black vinyl, which would help the fencing to blend better with the surrounding landscape. Middleground views for motorists along Dillard Road north of the proposed entry (beyond the proposed landscaping) would include views of the grey solar arrays at distances ranging from approximately 350 to 1,000 feet. The arrays would not be screened in this area, and views would change from grassland to the low, grey PV cells and metal poles which comprise the solar arrays (approximately 12 feet tall). For local motorists along Simpson Ranch Court (which is a dead-end street south of the project site serving only five residences that have views of the project site), the solar arrays would only be visible in middleground views, and their low height and dark grey color would help the panels to blend in with the landscape. Also, as shown in KOP 4, because of the existing topography and distance, the solar panels would not block either foreground or background views to the north from public viewpoints on Simpson Ranch Court. Furthermore, the existing visual quality as viewed from KOPs 1 through 4 is moderate to low due to a lack of intactness and vividness, and the presence of numerous manmade elements that visually intrude upon the landscape. Finally, the proposed project is required to comply with the *Countywide Design Guidelines* and would complete the County's Design Review Process to ensure compatibility with County regulations governing visual quality. Furthermore, the appearance of dryland pasture habitat, and grazing in the spring months, would be visually similar to existing cattle grazing operations.

Therefore, the proposed project would not conflict with adopted plans or policies related to visual quality and would not substantially degrade the existing visual character or quality of public views. However, views of the project site from Meiss Road and Dillard Road could represent a substantial degradation of visual quality if the proposed landscape plantings that would provide full screening failed to establish. Therefore, this impact is considered **potentially significant**, but would be reduced to **less than significant with mitigation** with implementation of Mitigation Measure AE-1.

As noted above, under CEQA, a lead agency is not required to evaluate potential visual changes from private viewpoints (*Mira Mar Mobile Community v. City of Oceanside*, 119 Cal. App. 4th 477 [Cal. Ct. App. 2004]). Nevertheless, for purposes of disclosure, it is noted that the changes that would occur in foreground and middleground views to the north from the two residences at 12500 and 12501 Simpson Ranch Court would represent a substantial degradation of the existing visual character.

Mitigation Measures

AE-1. Prepare and Implement a Landscape Screening and Irrigation Plan that Will be Monitored for Long-term Success.

Prior to the issuance of permits for grading, buildings, or improvement plans, the project applicant shall do the following:

- Engage the services of a licensed California landscape architect to prepare a Landscape Screening and Irrigation Plan. The plan shall specify the number, species, and sizes of plants to be used, along with any specific planting instructions for the landscape contractor. The full height of plants at maturity shall be specified in the plan to demonstrate that effective screening of proposed facilities from Meiss Road and Dillard Road will be accomplished. The plan shall include an irrigation plan that specifies the types and locations of irrigation to be used, and the time necessary for plants to become established. To the extent feasible, California native plants shall be used for screening. Plants that require minimal or no supplemental summer water at maturity shall be given preference over non-native plants. The plant species shall be selected to blend (in visual appearance) with existing species in the surrounding area. The primary screening shall be provided by evergreen species to ensure year-round visual screening; deciduous species may be used as accents for spring or summer flowers and fall colors.

- The applicant shall maintain the landscape screening in a condition that effectively screens of proposed facilities from Meiss Road and Dillard Road throughout the project's 35-year lifespan. The applicant shall monitor the success of the Landscape Screening and Irrigation Plan for seven years after landscape screening has been installed and provide a monitoring report to Sacramento County Planning and Environmental Review annually. Any failures of the irrigation system or landscape screening plants shall be corrected or replaced in a timely manner. If supplemental watering is required to support the landscape screening throughout the project's 35-year lifespan, the applicant shall provide it.

- The Landscape Screening and Irrigation Plan shall contain all elements required by Sacramento County Zoning Code Section 3.3.6.C.3.f.

- The Landscape Screening and Irrigation Plan shall be provided to Sacramento County for review and approval as part of the project's design review package.

Significance after Mitigation

Implementation of Mitigation Measure AE-1 would reduce the potentially significant impacts associated with degradation of visual character and quality to a less-than-significant level because landscape screening, as required in a Landscape Screening and Irrigation Plan approved by the County, would be planted along Dillard Road and Meiss Road and the applicant would be required to monitor and correct failures of the landscape

screening to ensure the landscape screening is successful throughout the project's 35-year lifespan. The landscaping screening would be irrigated at least until plant maturity, and potentially throughout the 35-year project lifespan if necessary to maintain a condition that effectively screens of proposed facilities from Meiss Road and Dillard Road.

IMPACT AE-2: CREATE SUBSTANTIAL NEW SOURCES OF LIGHT AND GLARE

As provided in the discussion that follows, the results of a glare analysis performed for the proposed solar arrays demonstrates that hazardous glare directed towards either aircraft or people on the ground would not occur. Although operation of the proposed solar facilities would result in only minor new sources of nighttime security lighting, construction-related nighttime lighting could result in substantial glare and potential sleep disruption for nearby residents. Therefore, the project's short-term, temporary construction impact is considered significant, but would be reduced to **less than significant with mitigation.**

GLARE ANALYSIS

In 2020, Dudek Consulting was retained to prepare a *Glare Analysis Report* for the proposed project (Dudek 2020), which is included as Appendix AE-1. This analysis was conducted per the FAA's recommended procedures described in its *Technical Guidance for Evaluating Selected Solar Technologies on Airports* (FAA 2018), and the geometric glare modeling software utilized by Dudek complies with interim FAA policy regarding solar energy system projects on federally obligated airports[1] (78 Federal Register [FR] 63276–63279).

Because of the project's vicinity to the Rancho Murieta Airport (located approximately 3.5 miles east of the project site), the presence of SR 16 to the north, and multiple public roads to the east, a five-mile-radius study area was used for Dudek's *Glare Analysis Report*. Although Mather Airport falls outside the five-mile study area, it was included in the analysis due to the high level of flight traffic. In ocular impact assessments for proposed solar facilities on a federally-obligated airport, FAA approval may be provided if the project demonstrates consistency with the following standards:

1. There is no potential for glint or glare in the existing or planned airport traffic control tower cab[2]; and
2. There is no potential for glare or "low potential for after-image" along the final approach path for any existing landing threshold or future landing thresholds

[1] An airport is federally obligated when the airport owner has accepted federal funds to buy land or develop or improve the airport. With the acceptance of federal funds, airports agree to comply with certain grant assurances, some of which relate to tenants and businesses operating on an airport. The FAA enforces these obligations through its Airport Compliance Program.

[2] The "cab" is the clear glass area at the top of an air traffic control tower, which provides a visual observation area for air traffic controllers and houses their equipment.

(including any planned interim phases of the landing thresholds) as shown on the current FAA-approved airport layout plan.

Although the proposed project is not located on a federally-obligated airport and is not required to do so by Sacramento County, Dudek staff utilized the industry standard ForgeSolar 3D geometric glare analysis software tool to analyze potential glare impacts associated with operation of the proposed project.

Reflected light can cause glint (a quick reflection) and glare (reflection that lasts for a longer duration), which can create hazards for pilots, air-traffic control personnel, motorists, and other potential receptors. In addition to visual hazards, glare can also result in a temporary loss of vision. The hazard level of glare depends on the ocular impact to the observer. Generally, an ocular impact is calculated as a function of the incidence angle and the intensity of the light. For the purpose of Dudek's (2020) *Glare Analysis Report*, an ocular impact is classified in one of three categories as follows:

- Low potential for the glare to cause an after-image (also known as flash blindness).
- Potential to cause a temporary after-image.
- Potential to cause retinal burn and permanent eye damage.

For the purpose of this impact analysis, any light reflected off of the solar panels is referred to as "glare."

To maximize the amount of solar energy generated from the solar array, some PV systems employ tracking mechanisms that would adjust to track the sun's trajectory as it crosses the sky. This type of system also reduces glare. In addition to panel orientation, the materials used in the panel construction also play an important role in reducing glare and maximizing efficiency. Different glass textures can be used to reflect light beams into the solar array and anti-reflective coatings can be added to the glass to further reduce reflectivity at high incidence angles (i.e., the angle at which the light hits the solar array). The proposed project would use a combination of fixed, single-axis or dual-axis tracking systems. The single-axis rotation would be aligned north-south with a maximum tracking angle of 60 degrees. The surface of the panels would be constructed of smooth glass and would include an anti-reflective coating.

Dudek's (2020) *Glare Analysis Report* included potential glare receptors within the study area consisting of residences, local roadways, and airports. All runway approach paths and air traffic control towers associated with both Mather Airport and the Rancho Murieta Airport were included in the analysis regardless of visibility or distance. (Sky Way Estates Airport was not included in the glare analysis because it is not a public use airport or a federally-obligated airport, and therefore is not subject to FAA regulations.)The modeled receptors for the glare analysis (Dudek 2020) consist of the following:

- Mather Airport Control Tower (the Rancho Murieta Airport does not have a control tower);

- 21 residential dwellings (selected as representatives from different locations around the project site);
- six airport flight paths extending two miles from each runway and following a straight-line approach vector; and
- 17 nearby roadways.

By inputting the proposed solar panel locations and characteristics, as well as the locations and elevations of the existing receptors, the ForgeSolar 3D software used by Dudek (2020) was able to simulate the sun's progression across the sky over the course of a year and model the potential glare that could be caused by the proposed solar arrays. If glare is detected, the software then quantifies the level of ocular impact hazard and pinpoints the exact time of year the glare would occur. This analysis was automatically performed for every minute of the calendar year, for each proposed solar array, and for each potential receptor. Modeling results demonstrated that the proposed solar panels would not result in any hazardous glare from any of the proposed solar panel arrays at any of the modeled receptors (Dudek 2020: Table 3 and Figures 4 and 5).

Nighttime Lighting

Nighttime lighting during the project's construction and decommissioning phases may be utilized. If nighttime construction activities were to occur within 500 feet of Meiss Road, Dillard Road, or the two residences at 12500 and 12501 Simpson Ranch Court, nighttime lighting associated with that construction would result in glare for motorists on the adjacent roadways and could result in sleep disruption for adjacent residences. Therefore, this impact is considered significant, but would be reduced to **less than significant with mitigation**, as described below.

The project's operational phase would require only minor nighttime security lighting at the substation, and battery storage buildings, none of which would be located in proximity to existing off-site residences. Nighttime operational lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives and would be shielded and oriented to focus illumination on the desired areas, thereby minimizing light spillover and eliminating glare for motorists traveling on Dillard Road. Operational lighting would be motion activated, shielded, and pointed downwards. Therefore, the project's operational nighttime lighting would not result in substantial glare, skyglow, or sleep disruption, and is considered a **less-than-significant** impact.

Impact Conclusion

Because the proposed solar arrays at the project site would not result in hazardous glare at the Mather Airport Control Tower, approach-departure flight paths for Mather or Rancho Murieta Airports, nearby residences, or nearby roadways, the proposed project would not result in a substantial new source of daytime glare that would result in a hazard for aircraft pilots or people on the ground. Additionally, operation of the proposed solar facilities would result in only minor new sources of nighttime lighting, which would not result in substantial nighttime glare or skyglow effects. However, nighttime lighting associated with project construction around the periphery of the project site would result

in glare for motorists on adjacent roadways and could result in sleep disruption for nearby residents; furthermore, nighttime lighting in the interior of the project site could result in skyglow effects. Therefore, the project's short-term, temporary construction-related nighttime light and glare impact is considered **significant**, but would be reduced to **less than significant with mitigation**, as described below.

Mitigation Measure

AE-2. Prepare a Construction Lighting Plan.

The project applicant shall require its construction contractor to prepare a nighttime construction lighting plan that includes implementation of the following measures:

1. Where construction areas are 500 feet or closer to Meiss Road, Dillard Road, or private residences, the construction contractor shall erect a temporary 6-foot-tall solid-screened fence at the edge of the construction area, between the work area and the residence/roadway.
2. All nighttime construction lighting, regardless of location within the project site, shall be shielded and recessed within each fixture so as to direct light downwards and focused on the area to be illuminated.
3. All work zone illumination shall use the minimum foot-candles necessary to safely perform the required work.
4. Any lighting systems with flood, spot, or stadium-type luminaires shall be aimed downward at the work area and rotated outward no greater than 30 degrees from straight down.

Significance after Mitigation

Implementation of Mitigation Measure AE-2 would reduce the significant short-term temporary impacts associated with glare, skyglow, and potential sleep disruption during nighttime construction activities to a **less-than-significant** level because construction areas that are 500 feet or closer to residences and roadways would be screened, and lighting would be shielded and directed downward.

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4 AGRICULTURAL RESOURCES AND LAND USE

INTRODUCTION

This chapter describes the existing land use and setting of the proposed project area. It describes Sacramento County's agricultural uses; identifies the extent of agricultural land on-site and within Sacramento County, including important farmland and grazing land; and determines the significance and quality of agricultural land within the project site. This chapter describes the proposed project's consistency with State, regional, and local plans that are not already addressed in the other resource sections of this document. In addition, this chapter evaluates potential impacts related to agricultural resources and whether the proposed project would result in a physical division of an established community.

ENVIRONMENTAL SETTING

The project site is located in unincorporated Sacramento County generally south of Jackson Highway (State Route 16), southeast of the Cosumnes River, west of Dillard Road, and south of Meiss Road. The project site is approximately 3.5 miles southwest of the community of Rancho Murieta and approximately 18 miles southeast of the city of Sacramento.

As described in Chapter 2, "Project Description," the project site is within two existing legal parcels, but the project site does not encompass the entirety of these two parcels. The assessor parcel numbers (APNs) for the parcels that contain the project site are 126-0110-001 and 126-0110-003, which amount to approximately 796 acres in total land area. The project site comprises approximately 380 acres of primarily agricultural lands within the two existing parcels that contain the project site. Refer to Plate PD-2 in Chapter 2, "Project Description," for an illustration of the project site within the two existing parcels that contain the project site.

EXISTING LAND USES

The project site consists of gently rolling topography that slopes to the south and west towards a central drainage feature, which in turn flows into an approximately 16-acre off-site pond. Most of the project site has been in use as grazing land since at least the 1930s. Portions of the site have also been used for irrigated pasture and cultivation of alfalfa hay for livestock feed. Seasonal wetlands, vernal pools, and ephemeral drainages are scattered throughout the property. The distance to the Cosumnes River ranges from approximately 150 feet in the northwest corner of the project site, to more than 0.5 mile in the southwest corner.

As described above in the "Environmental Setting" section, the project site is within two existing legal parcels (parcels 126-0110-001 and 126-0110-003), but the project site does

not encompass the entirety of these two existing parcels. Existing buildings/infrastructure on the northern parcel (parcel 126-0110-001) include an existing farmstead consisting of a home, multiple barns, and equipment storage areas in the northern portion of the project site. Existing infrastructure on the southern parcel (parcel 126-0110-003) includes a 73-acre solar field and an electrical substation, which are not part of the project site. (This existing solar facility was previously entitled under County Control No. PLNP2010-00126, is operated by a separate entity and is not part of the proposed project.) The only extant structures within the 380-acre project site are the existing farmstead components in the northwestern corner of the project site, as exhibited in Plate PD-4, Aerial Photo.

Surrounding Land Uses

The project site is surrounded by scattered rural residential, commercial development, and open space generally composed of annual grassland and agricultural fields. Specifically, a caviar aquaculture farm is to the north, orchards and a turkey farm are to the east, and the Consumes River corridor is to the west.

Simpson Ranch, which includes nine houses on 20-acre agricultural lots, is located approximately 0.4 mile south of the southern boundary of the project site and is the closest established residential community.

Mather Airport is approximately 7.3 miles northwest of the project site. There are also two smaller local airports in the project vicinity: Rancho Murieta Airport (approximately 3.5 miles to the northeast), and the Sky Way Estates Airport (approximately 4.6 miles to the southwest). See Chapter 3, “Aesthetics”, and the discussion of Hazards and Hazardous Materials in Chapter 15, “Summary of Impacts and their Disposition”, for a description of existing operations at the Mather Airport, Rancho Murieta Airport, and Sky Way Estates Airport.

Agricultural Resources

Sacramento County is the state’s 23rd largest agricultural county in terms of the total value of agricultural production (U.S. Department of Agriculture 2022). The total gross valuation for all agricultural commodities produced in Sacramento County in 2020 was approximately $454.8 million. This value represents a decrease of approximately 1.2 percent from the 2019 value of $460.4 million (Sacramento County Agricultural Commissioner 2020).

In 2020, wine grapes had the highest crop value ($156 million), with over 34 reported varieties being grown on 36,000 acres. Milk production is the number two commodity at $64 million, followed by poultry ($38 million), nursery stock[1] ($27 million), and pears ($26 million) (Sacramento County Agricultural Commissioner 2020). The Agricultural Commissioner also noted substantial increases in 2020 crop values for cherries (82 percent), oat hay (69 percent), almonds (61 percent), honey and pollination values (30

[1] Nursery stock consists of ornamental trees and shrubs, Christmas trees, and turf grass.

percent), and processing tomatoes (28 percent) (Sacramento County Agricultural Commissioner 2020).

Sacramento County Farmland Conversion

The California Department of Conservation's (DOC's) Important Farmland[2] classifications—prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance—identify the land's suitability for agricultural production by considering physical and chemical characteristics of the soil, such as soil temperature range, depth of the groundwater table, flooding potential, rock fragment content, and rooting depth. The classifications also consider location, growing season, and moisture available to sustain high-yield crops. (See Regulatory Setting discussion below, for detailed descriptions of important farmland classifications.)

The DOC field reports for Sacramento County identify the factors contributing to changes in agricultural land uses. Between 2004 and 2008, most of the conversion of irrigated important farmland (i.e., prime farmland, farmland of statewide importance, or unique farmland) was to urban land uses in the cities of Elk Grove, Rancho Cordova, Folsom, and Galt, and in the Natomas area of Sacramento. By 2010, idling of irrigated farmland became a major factor in the conversion of important farmland, exceeding the effect of urbanization (DOC 2016).

Table AL-1 summarizes acreages of agricultural land in Sacramento County between 2008 and 2018 and shows the percentage of net change in acreage over that 10-year period. The DOC estimated that Sacramento County included 367,569 acres of agricultural land in 2008, of which 213,118 acres (58 percent) were classified as important farmland and 156,144 acres (42 percent) were classified as grazing land (DOC 2018a). In 2018, the total acreage of agricultural land decreased to 351,583 acres, of which 201,596 acres (57 percent) were classified as important farmland and 149,987 acres (43 percent) were classified as grazing land (DOC 2018a). Overall, the total acreage of important farmland decreased by approximately 5.4 percent over the 10-year period, while the total acreage of agricultural land decreased by 4.3 percent (Table AL-1). While the number of acres of prime farmland and farmland of statewide importance decreased by 16.7 percent and 11.0 percent, respectively, the number of acres of unique farmland and farmland of local importance increased by approximately 0.8 percent and 25.6 percent, respectively. The total acreage of grazing land decreased at a lesser rate (4.3 percent) during this period.

Williamson Act

Under the California Land Conservation Act of 1965, also known as the Williamson Act, local governments can enter into contracts with private property owners to protect land (within agricultural preserves) for agricultural and open space purposes.

[2] Appendix G to the CEQA Guidelines has been revised to label these types of farmland as just "farmland" rather than "important farmland."

Table AL-1. Summary of Agricultural Land Conversion in Sacramento County

Important Farmland Category	2008 (In Acres)	2018 (In Acres)	Net Change (%) (2008–2018)
Prime Farmland	104,366	86,964	-16.7
Farmland of Statewide Importance	49,470	44,004	-11.0
Unique Farmland	15,463	15,580	0.8
Farmland of Local Importance	43,819	55,048	25.6
Important Farmland Subtotal	**213,118**	**201,596**	**-5.4**
Grazing Land	156,144	149,987	-3.9
Agricultural Land Total	**367,569**	**351,583**	**-4.3**

Source: DOC 2018a

None of the project site is under a Williamson Act contract (Sacramento County 2022). The nearest parcels under active Williamson Act contracts are located north of Meiss Road and east of Dillard Road and contracted parcels in the nonrenewal process are located south of the project site's southern boundary (Sacramento County 2022). Plate PD-3 in Chapter 2, "Project Description," shows the location of Williamson Act contracted land.

Project Site Agricultural Uses

Production practices observed at the project site include flood-irrigation and cultivation followed by harvesting and discing. After discing, some fields appear to remain fallow for short periods of time, allowing for the establishment of annual and biennial native and non-native annual grasses and broad-leaved plants, including many non-native species (Dudek 2021a). In October 2021, at the time of the publication of the Notice of Preparation of this Environmental Impact Report (EIR) for the proposed project, the project site was used year-round for cattle grazing.

According to the Sacramento County Important Farmland Map, published by the California Division of Land Resource Protection (DOC 2021), approximately 66 acres of the project site is designated as farmland of local importance and approximately 308 acres of the project site is designated as grazing land.[3] The remainder of the project site is designated as other land (approximately five acres) and urban and built-up land (less than one acre) (DOC 2021).[4] In addition, the northern portion of project parcel APN 126-

[3] The Sacramento County Board of Supervisors has defined Farmland of Local Importance as lands which do not qualify as Prime, Statewide, or Unique designation but are currently irrigated crops or pasture or non-irrigated crops; lands that would be Prime or Statewide designation and have been improved for irrigation but are now idle; and lands which currently support confined livestock, poultry operations, and aquaculture (DOC 2018b).

[4] There is a small area (<0.2 acres) on the east side of Dillard Road where the proposed project would tie into the existing SMUD powerlines that consists of the Dillard Road shoulder that is mapped in the DOC

0110-001, outside of the project site, is designated as prime farmland and is actively farmed. Plate PD-3 in Chapter 2 shows the location of important farmland within and adjacent to the project site.

AGRICULTURAL ZONING

The project site is currently zoned by Sacramento County as Agricultural 20 (AG-20). The AG-20 zoning designation is intended to eliminate encroachment of incompatible land uses with the long-term agricultural use; discourage the premature and unnecessary conversion of agricultural land to urban uses; assure the preservation and sustainability of agricultural lands that have a definite value as open space and for the production of agricultural products, so as to preserve an important physical, social, aesthetic, and economic asset of the residents of the County; and, encourage the retention of sufficiently large agricultural lots to assure maintenance of viable agricultural units (Sacramento County 2021).

Permitted land uses within the AG-20 zoning district include general agricultural uses, small wineries, roadside crop sales, single-family detached dwelling units, farmworker housing, public parks, and minor utilities (i.e., a utility facility that is necessary to support an established use and involves only minor structures, such as electrical distribution lines) (Sacramento County 2021). Commercial solar facilities occupying more than 10 acres require approval of a Use Permit by the County Board of Supervisors (Sacramento County 2021).

REGULATORY SETTING

FEDERAL

There are no federal plans, policies, regulations, or laws related to agriculture and forestry resources that apply to the proposed project.

STATE

CALIFORNIA IMPORTANT FARMLAND INVENTORY SYSTEM AND FARMLAND MITIGATION AND MONITORING PROGRAM

The Farmland Mapping and Monitoring Program (FMMP) was established by the State of California in 1982 to continue the important farmland mapping efforts begun in 1975 by the U.S. Soil Conservation Service (now called the Natural Resources Conservation Service, under the U.S. Department of Agriculture). The intent was to produce agricultural resource maps, based on soil quality and land use across the nation. The DOC sponsors

database as farmland of statewide importance. Although this land is designated as such on maps, the tie-in activities on this road shoulder area would not impact agricultural resources here as they would be located on the road shoulder, rather than in the adjacent agricultural fields.

the FMMP and also is responsible for establishing agricultural easements, in accordance with California Public Resources Code (PRC) Sections 10250–10255.

The DOC FMMP maps are updated every two years with the use of aerial photographs, a computer mapping system, public review, and field reconnaissance. The following list provides a comprehensive description of all the categories mapped by the DOC (DOC 2022):

- **Prime Farmland**—Land that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields.
- **Farmland of Statewide Importance—**Land similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture.
- **Unique Farmland—**Land of lesser quality soils used for the production of the state's leading agricultural cash crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California.
- **Farmland of Local Importance**—Land that is of importance to the local agricultural economy, as defined by each county's local advisory committee and adopted by its board of supervisors. The Sacramento County Board of Supervisors has defined Farmland of Local Importance as lands which do not qualify as Prime, Statewide, or Unique designation but are currently irrigated crops or pasture or non-irrigated crops; lands that would be Prime or Statewide designation and have been improved for irrigation but are now idle; and lands which currently support confined livestock, poultry operations, and aquaculture (DOC 2018b).
- **Grazing Land—**Land with existing vegetation that is suitable for grazing.
- **Urban and Built-Up Lands—**Land that is used for residential, industrial, commercial, institutional, and public utility structures and for other developed purposes.
- **Other Lands—**Land that does not meet the criteria of any of the previously described categories and generally includes low-density rural developments, vegetative and riparian areas not suitable for livestock grazing, confined-animal agriculture facilities, strip mines, borrow pits, and vacant and nonagricultural land surrounded on all sides by urban development.

Important farmland is classified by the DOC as prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance. Under California Environmental Quality Act (CEQA), the designations for prime farmland, farmland of statewide importance, and unique farmland are defined as "agricultural land" or "farmland" (PRC Sections 21060.1 and 21095, and CEQA Guidelines Appendix G).

LOCAL

SACRAMENTO COUNTY GENERAL PLAN

The *Sacramento County General Plan of 2005–2030* (Sacramento County 2020) was adopted on November 9, 2011. Portions of the County General Plan contain policies for urban development including urban communities and the infrastructure necessary to serve them. Other sections of the County General Plan describe strategies to recognize and preserve areas of open space and natural resources. As a whole, the General Plan reflects a balance between the amount and location of lands planned for urban uses and those planned to remain in a rural or natural setting.

GENERAL PLAN POLICIES

The General Plan includes the following policies related to agricultural resources and land use that may apply to the proposed project.

AGRICULTURAL ELEMENT

AG-5. Projects resulting in the conversion of more than fifty (50) acres of farmland shall be mitigated within Sacramento County, except as specified in the paragraph below, based on a 1:1 ratio, for the loss of the following farmland categories through the specific planning process or individual project entitlement requests to provide in-kind or similar resource value protection (such as easements for agricultural purposes):

- prime, statewide importance, unique, local importance, and grazing farmlands located outside the Urban Services Boundary (USB);[5]
- prime, statewide importance, unique, and local importance farmlands located inside the USB.

The Board of Supervisors retains the authority to override impacts to unique, local, and grazing farmlands, but not with respect to prime and statewide farmlands. However, if that land is also required to provide mitigation pursuant to a Sacramento County endorsed or approved Habitat Conservation Plan (HCP), then the Board of Supervisors may consider the mitigation land provided in accordance with the HCP as meeting the requirements of this section including land outside of Sacramento County.

Note: This policy is not tied to any maps contained in the Agricultural Element. Instead, the most current Important Farmland Map from the DOC should be used to calculate mitigation.

[5] The Urban Services Boundary (USB) and Urban Policy Area (UPA) are growth management tools of the County's General Plan. The USB is the ultimate growth boundary for the unincorporated area and the UPA defines the area within the USB expected to receive urban services in the near term.

PUBLIC FACILITIES ELEMENT

PF-78. Large multi-megawatt solar and other renewable energy facilities should be sited at locations that will minimize impacts. The following guidelines should be considered, though is it [sic] recognized that each project is different and must be analyzed individually, and that other factors may affect the suitability of a site. Locational criteria for wind turbines should be determined on a case-by-case basis and referred to the Sacramento County Airport System and the FAA for review and comment.

- Desirable sites are those which will minimize impacts to county resources and will feed into the electrical grid efficiently, including:
    - Lands with existing appropriate land use designations, e.g., industrial.
    - Brownfield or other disturbed properties (e.g., former mining areas, mine tailings) or land that has been developed previously and has lost its natural values as open space, habitat or agricultural land.
    - Sites close to existing facilities necessary for connection to the electrical grid to minimize the need for additional facilities and their impacts, and to improve system efficiency.
- Other sites may be used for siting renewable energy facilities after consideration of important natural and historic values of the land, including:
    - Farmlands. Site on farmlands of the lowest quality, e.g., land classified by the DOC as “other land” or “grazing land”, then consider farmlands of local, unique or statewide importance. Avoid high-quality farmlands, especially land classified by the DOC as prime and lands under active Williamson Act contracts.
    - Habitat and Other Open Space Lands. Site on lands with the lowest habitat and open space values, and consider how a site will affect conservation planning, e.g., the Conservation Strategy in the South Sacramento HCP. Avoid areas containing vernal pool complexes and associated uplands.
    - Scenic Values. Site in areas of lowest scenic values and avoid visually prominent locations e.g., ridges, designated scenic corridors and designated historic sites.
    - Cultural Resources. Site in areas that are known to have limited potential for containing cultural resources. Otherwise, avoid sites with known cultural resources.

PF-79. New solar and other renewable energy facilities should be designed and developed so as to minimize impacts to sensitive biological resources such as oak woodlands and vernal pools, cultural resources (including designated historic landscapes), or farmlands as defined by the California DOC. Nearby farm operations shall not be negatively affected by renewable energy facilities, per the policies of the Right-to-Farm Ordinance and the Agricultural Element.

URBAN SERVICES BOUNDARY AND URBAN POLICY AREA

The project site is located outside of the County's current USB and Urban Policy Area (UPA).[6] The UPA and the USB are designed to promote maximum efficiency of land uses and protection of the County's natural resources. The USB allows for the permanent preservation of agriculture and rangelands, critical habitat and natural resources, while the UPA concentrates and directs growth within previously urbanized areas, limiting arbitrary and sprawling development patterns. These two growth boundaries work in tandem to manage and direct future development, as well as provide infrastructure and service providers with intermediate and ultimate growth boundaries to use to plan for future expansion.

LAND USE DESIGNATIONS

The project site is designated General Agricultural (80 acres) (GA-80) by the Sacramento County General Plan. This designation identifies land that is generally used for agricultural purposes, but less suited for intensive agricultural than Agricultural Cropland. The minimum size allowable is 80 acres, large enough to maintain an economically viable farming operation. Typical farming activities include dry land grain, and irrigated and dry land pasture. Constraints found in areas with this designation include shallow soils, uncertain water supply, moderate slopes, fair to poor crop yield, and farm unit fragmentation. Only agricultural production is permitted in areas with this designation. The GA-80 designation allows single-family dwelling units at a density no greater than 80 acres per unit (Sacramento County 2020). Other uses, such as the proposed project, are permitted with approval of a Use Permit as described below.

SACRAMENTO COUNTY ZONING CODE

The Sacramento County Zoning Code was developed to encourage the most appropriate use of land; to conserve, protect, and stabilize the value of property; to provide adequate open spaces for light and air; to prevent undue concentration of population; to lessen congestion on the streets; to facilitate adequate provisions for community utilities such as transportation, water, sewerage, schools, parks, and other publicly owned facilities; and to promote the public health, safety, and general welfare.

The project site is currently zoned by Sacramento County AG-20. The AG-20 zoning designation is intended to eliminate encroachment of incompatible land uses with the long-term agricultural use; discourage the premature and unnecessary conversion of agricultural land to urban uses; assure the preservation and sustainability of agricultural lands that have a definite value as open space and for the production of agricultural products, so as to preserve an important physical, social, aesthetic, and economic asset

[6] The USB is the boundary of the urban area in the unincorporated County that provides a permanent boundary that is not modified except under extraordinary circumstances and is used as a planning tool for urban infrastructure providers for developing long-range master plans for future urbanization. The UPA defines the area expected to receive urban levels of public infrastructure and services within the 20-year planning period of the County General Plan. The UPA provides the geographic basis for infrastructure master plans, particularly for public water and sewerage, which require large capital investments and relatively long lead times for the installation of capital improvements.

of the residents of the County; and encourage the retention of sufficiently large agricultural lots to assure maintenance of viable agricultural units (Sacramento County 2021). The 20-acre minimum parcel size in this district anticipates agricultural use.

Permitted uses within the AG-20 zoning designation include raising and harvesting crops, commercial bee keeping, primary processing of agricultural products, stables and corrals, roadside crop sales, single-family dwelling units, farm worker housing, parks, wildlife preserves, and gas and oil wells (Sacramento County 2021).[7] Uses permitted with approval of a Use Permit include agricultural equipment repair, maintenance, and manufacturing; food processing industries; large wineries; places of worship; private schools; campgrounds; hunting clubs; major utilities; solar energy facilities; wind turbine facilities; and wireless communication towers (Sacramento County 2021).[8]

USE REGULATIONS

Chapter 3, "Use Regulations," of the Sacramento County Zoning Code describes the land uses allowed in the County and the applicable use-specific standards.

Section 3.6.6.C, "Solar Energy Facilities," regulates solar energy facilities, including solar panels (photovoltaic systems), solar thermal systems that convert solar energy to electricity by heating a working fluid to power a generator, and solar hot water systems designed to heat water for use by either domestic or commercial uses. Solar facilities are categorized as accessory solar facilities, which are those necessary to meet on-site energy demands, and commercial solar facilities, which are solar facilities that produce energy for off-site use. The proposed project is categorized as Commercial II Solar Energy Facilities.[9]

Section 3.3.6.C lists the required application materials; setback, fencing, signage, and landscaping requirements; operations, reclamation, and decommissioning requirements; and provides for financial assurance guarantees for Commercial II Solar Facilities (Sacramento County 2021).

[7] See Table 3.1, "Allowed Uses," in the Sacramento County Zoning Code (available: https://planning.saccounty.net/LandUseRegulationDocuments/Pages/Sacramento%20County%20Zoning%20Code.aspx).

[8] Use Permits require review and approval in accordance with the Sacramento County Zoning Code and uses are subject to all applicable regulations, including use standards provided in Chapter 3, "Use Regulations," and Chapter 5, "Development Standards," of the Sacramento County Zoning Code. Each Use Permit application is evaluated as to its probable effects on adjacent properties and surrounding areas. Depending on the proposed use, approval of the Use Permit is provided by the Planning Director, Zoning Administrator, Planning Commission, or County Board of Supervisors.

[9] Per Section 7.3 of the Sacramento County Zoning Code Commercial II Solar Facilities are defined as photovoltaic technologies (solar panels) or solar thermal technologies producing energy for off-site use, covering more than 10 acres.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

AGRICULTURE AND FORESTRY RESOURCES

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact related to agriculture and forestry resources if it would:

- convert prime farmland, unique farmland, or farmland of statewide importance (farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to nonagricultural use;
- conflict with existing zoning for agricultural use or a Williamson Act contract;
- conflict with existing zoning for, or cause rezoning of, forestland (as defined in PRC Section 12220[g]), timberland (as defined by PRC Section 4526), or timberland zoned timberland production (as defined by Government Code Section 51104[g]);
- result in the loss of forestland or conversion of forestland to non-forest use; or
- involve other changes in the existing environment that, because of their location or nature, could result in conversion of farmland to nonagricultural use or conversion of forest land to non-forest use.

In addition to the CEQA Guidelines significance criteria for farmland loss, County General Plan Policy AG-5 defines substantial farmland loss as 50 acres. The CEQA Guidelines indicate that prime, statewide importance, and unique farmland loss may be a significant impact, but the County General Plan further includes farmland of local importance and grazing land; though in the case of grazing land, the threshold specifically applies only to such lands which occur outside of the USB.

LAND USE AND PLANNING

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact related to land use and planning if it would:

- physically divide an established community or
- conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

For an impact to be considered significant under this threshold, any inconsistency would also need to result in a significant adverse change in the environment not already addressed in the other resource sections of this document.

ISSUES NOT DISCUSSED FURTHER

Conflict with Existing Zoning for Agricultural Use—The project site is currently zoned by Sacramento County as AG-20. The AG-20 zoning designation anticipates agricultural use of this land and is intended to promote the long-term agricultural use and discourage

the premature and unnecessary conversion of agricultural land to urban use. As discussed above, the proposed project is categorized as Commercial II Solar Facilities by the Sacramento County Zoning Code and approval of a Use Permit is required for this use under the AG-20 zoning designation. Implementation of the proposed project would require the project applicant to submit a Use Permit application for review and approval by the Sacramento County Board of Supervisors. As a condition of the Use Permit, the project applicant would be required to meet all use regulations for Commercial II Solar Facilities provided in Section 3.6.6.C in Chapter 3 of the Sacramento County Zoning Code. The Sacramento County Board of Supervisors would evaluate the proposed project's effects on adjacent properties and potential conflicts with the AG-20 zoning designation to ensure compatibility of the proposed project with surrounding uses and zoning (Sacramento County 2021). With approval of the proposed project, issuance of a Use Permit, and compliance with permit conditions, the proposed project would not conflict with zoning for agricultural use. Therefore, **no impact** would occur, and this issue is not addressed further in this EIR.

Conflict with Existing Williamson Act Contract— No lands are under Williamson Act contract on the project site. Therefore, implementing the proposed project would not conflict with an existing Williamson Act contract. Therefore, **no impact** would occur, and this issue is not addressed further in this EIR.

Conflict with Existing Zoning for, or Cause Rezoning of, Forest Land, Timberland, or Timberland Zoned Timberland Production— The project site is not zoned as forestland, timberland, or a timberland production zone. Thus, the proposed project would not conflict with existing zoning for, or cause rezoning of, forestry resources. Therefore, **no impact** would occur, and this issue is not addressed further in this EIR.

Result in the Loss of Forest Land or Conversion of Forest Land to Non-Forest Use— The project site does not contain timberland as defined by PRC Section 4526 or contain 10 percent native tree cover that would be classified as forestland under PRC Section 12220(g). Thus, the proposed project would not result in conversion of forest land to non-forest use. Therefore, **no impact** would occur, and this issue is not addressed further in this EIR.

Physically Divide an Established Community— 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 of unincorporated Sacramento County, and the nearest established community, Simpson Ranch, is located 0.4 mile south of the southern project boundary. The proposed project does not include any linear features, such as new roadways, or any physical feature that would create a barrier, divide, or separate adjacent land uses or hinder access. Therefore, **no impact** would occur, and this issue is not addressed further in this EIR.

IMPACT AL-1: CONVERSION OF AGRICULTURAL LAND TO NON-AGRICULTURAL USE

At the proposed project site, approximately 380 acres of existing livestock (cattle) grazing land would be converted to new solar generating facilities. Most of the project site would consist of pole-mounted solar panel arrays. In addition, an electrical substation, battery storage buildings, internal roadways, chain link fencing and gates, and other ancillary facilities would be developed.

Based on analysis of farmland mapping provided under the FMMP, approximately 66 acres of the project site is designated as farmland of local importance and approximately 308 acres of the project site is designated as grazing land. The remainder of the project site is designated as other land (approximately five acres) and urban and built-up land (less than one acre) (DOC 2021).

Appendix G of the CEQA Guidelines indicates that conversion of prime farmland, farmland of statewide importance, or unique farmland to non-agricultural use would result in a significant environmental effect for the conversion of agricultural land. No portion of the 380-acre project site is designated as prime farmland, farmland of statewide importance, or unique farmland; therefore, no impact would occur under the CEQA thresholds.[10]

However, County General Plan Policy AG-5 defines the loss of 50 acres or more of farmland of local importance and grazing land outside of the USB as a substantial conversion of farmland. Construction of the proposed project would require temporary ground disturbance during installation of project facilities. The electrical substation, battery storage foundations, entrances, and interior access roads (unpaved but with an aggregate base) would result in approximately 17 acres of new impervious surfaces associated with the project facilities representing about 4.5 percent of the total proposed development area. During project operations, the remainder of the project site would be maintained as dryland pasture supporting a combination of grassland species and non-invasive forbs. In addition, the project applicant has indicated that the project site would include concurrent grazing operations pursuant to the project's draft *Agricultural Management Plan* (Dudek 2023).

At the end of the project's estimated operational life of 35 years, decommissioning would occur in accordance with Sacramento County's decommissioning requirements. The project's *Decommissioning and Site Restoration Plan* (Dudek 2021b) is included in

[10] There is a small area (<0.2 acres) on the east side of Dillard Road where the proposed project would tie into the existing SMUD powerlines that consists of the Dillard Road shoulder that is mapped in the DOC database as farmland of statewide importance. Although this land is designated as such on maps, the tie-in activities on this road shoulder area would not impact agricultural resources here as they would be located on the road shoulder, rather than in the adjacent agricultural fields.

Appendix PD-1. Restoration activities would be required to return the project site to agriculture use (i.e., livestock grazing), and would include the following:

- Returning the land to agricultural use would entail increasing the nutrient content to pre-construction levels and aerating the soils through regular tilling.
- Reclamation would restore landform features, vegetative cover, and hydrologic function after closure of the facility. The process would involve replacement of topsoil, brush, rocks, and natural debris over disturbed areas so that the site will support agriculture use (i.e., livestock grazing) or similar useful purpose.
- If soils are determined to be compacted at levels that would affect successful restoration, decompaction would occur. The method of decompaction would depend on how compacted the soil has become over the life of the project.
- A combination of seeding, planting of nursery stock, transplanting of local vegetation within the proposed disturbance areas, and staging of decommissioning activities enabling direct transplanting, would be considered.

The success of the decommissioning restoration efforts would be based on the development of the target vegetation communities relative to undisturbed reference sites.[11] Visual inspections would be conducted to document germination, growth, and survival of seeded species. Data collected would include species composition and cover, general size and vigor of the plants, observed soil erosion, evidence of wildlife use, and any other information that would be useful in evaluating success. The monitoring program would also include photographic documentation at permanent photo locations. To ensure the availability of funds to cover decommissioning and restoration obligations, the project applicant would be required to post a performance bond, letter of credit, or other form of surety (Dudek 2021b).

While the applicant proposes to maintain the site in grazing during operation of the facility, should grazing be discontinued or the site is otherwise converted to a non-agricultural use, the impacts would be **potentially significant** based on Sacramento County General Plan Policy AG-5.

Mitigation Measure

AL-1. Implement the Agricultural Management Plan.

Prior to issuance of a Building Permit, the project applicant shall submit the draft Agricultural Management Plan to Sacramento County Planning and Environmental Review for review and approval. The Agricultural Management Plan shall be implemented throughout the operational life of the project and specify the following conditions to ensure ongoing use of the project site for grazing.

[11] The reference sites would represent intact, native vegetative communities with similar species composition and conditions that that occurred prior to impacts.

SITE PREPARATION/SOIL TREATMENT

After completion of construction activities, all construction materials, trash, and debris shall be removed from areas of the project site that are to be seeded. Any eroded areas shall be repaired uniformly without leaving pits, holes, or low areas.

Soil preparation (decompaction, tillage, seeding) activities shall be conducted when soil conditions are dry or only slightly moist. Soil preparation shall not be undertaken if soils are so moist that traffic or tillage would lead to mold or smearing. Because it is not possible to predict the exact construction schedule, two different approaches may be used for soil preparation:

- Dry Season Construction: If construction activities are completed in fall, soil preparation activities shall be implemented to provide the best opportunity for seeding to be completed by October 15. Soil preparation activities may be conducted later in fall provided dry or only slightly moist soil conditions persist.
- Wet Season Construction: If construction activities are completed in winter when soil conditions are too wet to allow for effective soil manipulation, soil preparation activities would be postponed until the following late summer or fall, as described above under Dry Season Construction. Under this scenario, it may be necessary to apply an herbicide treatment in late spring/early summer to minimize the spread of invasive species.

Prior to seeding, any areas intended for revegetation that were compacted by construction activities shall be decompacted to not more than 12 inches depth on not less than 18-inch centers, such that clods remain and soil is not pulverized. Soil shall be left in a roughened condition if construction is completed in spring or early summer and several months remain until seeding. Before seeding, a disk and/or ring roller shall be used to reduce the soil surface to a suitable planting medium with a firm but not compacted surface and clods reduced to less than 1 inch. If organic soil amendments are used, compost shall be obtained from a producer fully permitted as specified under the California Integrated Waste Management Board, Local Enforcement Agencies and any other State and Local Agencies that regulate Solid Waste Facilities.

SEEDING PLAN

Final site-specific seeding plans shall be developed based on assessment of the following factors: (1) soil conditions; (2) appropriate grassland species; and (3) dietary preferences of the animals identified to graze on-site. These seeding plans shall be designed to be self-perpetuating; that is, the vegetation is intended to re-seed naturally.

The site shall be seeded using seed drills or broadcast seeding followed by light raking. Hydroseeding and hydromulching may also be used depending on the timing and site-specific conditions. Seeding shall be completed prior to October 15.

GRAZING PLAN

The project applicant shall enter into agreements with a grazing entity and/or habitat management contractors to manage the forage resources. Grazing and forage utilization shall be managed so that erosion and nutrient losses are minimized and so that overgrazing does not occur. These guidelines are designed to provide for sustainable forage production and to protect soil resources and water quality.

Grazing would likely start between March 1 and April 30 with the timing dependent on weather and foraging conditions. During the grazing period, grass shall be maintained at a height of approximately 12 inches and optimally 4–8 inches. The grazing entity and/or habitat manager shall also complete regular inspections for invasive weed populations to maintain a native grassland within the fenced solar array.

As required by Mitigation Measure WF-1 (in Chapter 13, “Wildfire”), after the grazing period, the applicant shall keep grasses and weeds on the undeveloped upland portion of the project site to a height of six inches or less, and throughout the dry season months, between May and November, to manage grass height and fuel load on-site. To control the weed height, mowing may be required.

As required by Mitigation Measure BR-3 (in Chapter 6, “Biological Resources”), grazing and mowing shall not occur within the established wetland avoidance buffers. As required by Mitigation Measures BR-1a through BR-1l, grazing and mowing activities shall avoid senstive habitats, as applicable.

MONITORING PLAN

Annual reports shall be prepared by the project applicant for the first five years of the project’s operation and then every three years afterwards for the life of the project. The annual reports and triennial reports shall be submitted to Sacramento County Planning and Environmental Review, and Sacramento County Agricultural Commissioner. These reports shall include at a minimum:

- The name, title, and company of all persons involved in grazing contracts and report preparation.
- Documentation of grazing timing and locations, equipment, and water use.
- Maps or aerials showing clipping and photo documentation locations.
- An assessment of agricultural productivity and the contribution of grazing efforts to achieve native grassland ground cover that is utilized by biological resources native to the project area.

SIGNIFICANCE AFTER MITIGATION

The implementation of Mitigation Measure AL-1 would reduce project-related impacts related to the conversion of agricultural resources to non-agricultural use to a **less-than-significant** level because implementation of the *Agricultural Management Plan* (Dudek 2023) with conditions directed by Mitigation Measure AL-1 would require continued

agricultural use (i.e., grazing) of the project site through the operational life of the project and maintain the site's soil characteristics. As stated above under Regulatory Setting, the County General Plan Policy AG-5 states that projects resulting in the loss of more than 50 acres of prime, statewide importance, unique, local importance, and grazing farmlands located outside the USB would result in a substantial loss of farmland and would require mitigation. However, with the implementation of the Agricultural Management Plan outlined in Mitigation Measure AL-1, the conversion of farmland would not occur because the project applicant would be required to continuously use the project site for agricultural uses, such as grazing. With the implementation of Mitigation Measure AL-1, the renewable energy facilities would be co-located with grazing on-site and thus, agricultural activities would continue on-site concurrently with the proposed project operations.

As discussed above, the project site predominantly contains land characterized as grazing land by the DOC (308 acres). According to County General Plan Policy PF-78, large multi-megawatt solar and other renewable energy facilities should be sited at locations that would minimize impacts. This could include the consideration of sites that are close to existing facilities necessary for connection to the electrical grid and farmlands of the lowest quality, e.g., land classified by the DOC as other land or grazing land and should avoid high-quality farmlands that are classified as prime farmland or active Williamson Act contracted land. The proposed project site does not contain any land that would be designated as prime farmland, farmland of statewide importance, or unique farmland, and the project site does not contain lands that are under Williamson Act contracts.[12]

If the proposed project were approved, the DOC's FMMP mapping would result in a change to the entire site from farmland to urban and built-up land. However, the FMMP program is primarily based on aerial data review and does not yet have a feature within the program to indicate two compatible uses such as agricultural uses within a solar energy facility. With the implementation of Mitigation Measure AL-1, the applicant would be required to continue supporting agricultural use on-site throughout the life of the project. Additionally, after decommissioning is complete, the site would be required to be restored to agricultural land in accordance with Sacramento County's decommissioning requirements.

IMPACT AL-2: CHANGES IN THE EXISTING ENVIRONMENT THAT COULD INDIRECTLY RESULT IN CONVERSION OF FARMLAND TO NON-AGRICULTURAL USE

Only portions of APNs 126-0110-001 and 126-0110-003 would be utilized for the proposed project (see Plate PD-2 in Chapter 2). The northern portion of APN 126-0110-

[12] There is a small area (<0.2 acres) on the east side of Dillard Road where the proposed project would tie into the existing SMUD powerlines that consists of the Dillard Road shoulder that is mapped in the DOC database as farmland of statewide importance. Although this land is designated as such on maps, the tie-in activities on this road shoulder area would not impact agricultural resources here as they would be located on the road shoulder, rather than in the adjacent agricultural fields.

001 outside of the project site is actively farmed and designated as prime farmland and APN 126-0110-003 is actively grazed. The actively farmed portion of APN 126-0110-001 outside of the project site boundary would not be encroached upon and the parcel would not become fragmented, reduced in size, and irregularly shaped to such a degree that continuing agricultural land uses could be less profitable or otherwise less feasible. In addition, the proposed project would not impede the movement of agricultural equipment at surrounding agricultural operations. All construction equipment storage, construction areas, and access roads would be sited within the project site and project operations would not substantially increase in vehicular traffic in areas where agricultural equipment uses roads. Therefore, the proposed project would not indirectly result in other changes in the physical environment that could result in the conversion of agricultural land, including agricultural land designated as prime farmland, to non-agricultural uses. For similar reasons, proposed project operations would not conflict with the County's Right-to-Farm Ordinance. This impact would be **less than significant**.

IMPACT AL-3: CONSISTENCY WITH PLANS, POLICIES, AND REGULATIONS

Consistency issues between implementation of the proposed project and the County General Plan or other land use plans and policies (i.e., South Sacramento HCP, and the Mather Airport Land Use Compatibility Plan) are related to land use regulations, which are, in part, based on avoiding or otherwise restricting uses that would adversely impact resources at the project site or adjacent land uses. While EIRs must discuss inconsistencies between proposed project and applicable plans, plan consistency is not generally a CEQA issue.

Specific impacts and project consistency issues associated with agricultural resources are discussed in Impact AL-1 above, and in other resource and issue areas that are addressed in each technical chapter of this document, as appropriate (e.g., the South Sacramento HCP is addressed in Chapter 6, "Biological Resources"). These technical chapters provide a detailed analysis of other relevant physical environmental effects that could result from implementation of the proposed project and identify mitigation measures, as necessary, to reduce impacts. Implementation of the proposed project would not conflict with adopted County General Plan policies or other land use plans, policies, or regulations that would generate any adverse physical impacts beyond those addressed in detail in the environmental chapters of this document (i.e., air quality, biological resources, cultural resources, etc.).[13] Therefore, this impact would be **less than significant**.

[13] "The issue of whether a proposed project is consistent with a county's general plan is not a CEQA issue…" (*The Highway 68 Coalition v. County of Monterey, et al.* [6th Dist. 2017] Cal.App.5th).

5 AIR QUALITY

INTRODUCTION

This chapter describes existing local and regional air quality conditions; summarizes applicable air quality regulations at the federal, state, and local levels; and analyzes potential short-term and long-term air quality impacts that could result from implementation of the proposed project.

In response to the Notice of Preparation, the Sacramento Metropolitan Air Quality Management District (SMAQMD) recommended that the analysis of impacts to air quality consider the SMAQMD's CEQA Guide to Air Quality Assessment in Sacramento County (SMAQMD 2021) for the methods to analyze air quality impacts, including thresholds of significance, calculation methods, and mitigation measures. The SMAQMD also recommended that operational criteria pollutant health effects be analyzed pursuant to the "Friant Ranch" decision using the SMAQMD's Guidance to Address the Friant Ranch Ruling for CEQA Projects (SMAQMD 2020). The SMAQMD also noted that the project would be subject to SMAQMD rules and regulations and required to implement the Basic Construction Emission Control Practices.

ENVIRONMENTAL SETTING

Ambient concentrations of air pollutants are determined by the amount of emissions released by the air pollutants sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources, as discussed separately below.

LOCATION, CLIMATE, AND ATMOSPHERIC CONDITIONS

The project site is in the Sacramento Valley Air Basin (SVAB), which is characterized by cool winters and hot, dry summers tempered by occasional westerly breezes from the Sacramento–San Joaquin River Delta. The region has a Mediterranean climate, characterized by hot, dry summers and cool, rainy winters.

In general, the SVAB is relatively flat and bounded by the north Coast Ranges to the west and the northern Sierra Nevada to the east. Air flows into the SVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento–San Joaquin River Delta from the San Francisco Bay Area. The inland location and surrounding mountains typically prevent the area from experiencing much of the ocean breeze that moderates the temperatures in coastal regions. The mountains surrounding the Sacramento Valley create a barrier to air flow, which can trap in air

pollutants, particularly in the autumn and early winter when large pressure cells lie over the Sacramento Valley and temperatures are low. The lack of surface wind during these periods and reduced vertical flow caused by less surface heating, reduces the influx of outside air and allows air pollutants generated within the SVAB to become concentrated in a stable volume of air. Ground concentrations are the highest when these conditions are combined with smoke from agricultural burning or forest fires or when temperature inversions the trap cool air, fog, and pollutants near the ground. Alternatively, winds and unstable atmospheric conditions associated with the passage of winter storms result in periods of low air pollution and excellent visibility.

Characteristic of the winter months in the SVAB are periods of dense and persistent low-level fog, which are most prevalent between storms. This precipitation and fog also tend to reduce or limit some pollutant concentrations. However, between winter storms, high pressure and light winds contribute to low-level temperature inversions and stable atmospheric conditions, resulting in the concentration of air pollutants.

May through October is ozone season in the SVAB and is characterized by poor air movement in the mornings and the arrival of the Delta sea breeze from the southwest in the afternoons. In addition, with the longer daylight hours, a larger amount of sunlight is available to fuel photochemical reactions between volatile organic compounds (VOC) and nitrogen oxide (NO_X), which in turn result in ozone formation. Typically, the Delta breeze transports air pollutants northward out of the SVAB. However, during approximately half of the time from July to September, a phenomenon known as the Schultz Eddy prevents this from occurring. The Schultz Eddy phenomenon causes winds on the west side of the SVAB to shift to a northerly wind, blowing air pollutants southward back into the SVAB. This phenomenon exacerbates the concentration of air pollutant emissions in the air basin and can contribute to violations of ambient air quality standards.

CRITERIA AIR POLLUTANTS

As described in greater detail below, the state and federal air quality acts established a comprehensive and cooperative federal-state program to achieve state and national ambient air quality standards for common air pollutants. Because the air quality standards for these air pollutants are regulated using human and environment health-based criteria, they are commonly referred to as “criteria air pollutants”.

A brief description of key criteria air pollutants in the SVAB and their health effects is provided below. Criteria air pollutants include ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM) less than 10 micrometers in diameter (PM_{10}), particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$), and lead. However, for the purposes of this analysis, criteria air pollutants of primary concern due to the regional nonattainment status (refer to Table AQ-1 further below) include ozone (and ozone precursors) and PM. Criteria air pollutants, their sources, and potential health effects from exposure are summarized below.

Ozone. Ozone is the most common component of smog and is the principal pollutant that causes adverse health effects. Ozone is toxic and colorless and has a pungent odor. In

high concentrations, ozone and other photochemical oxidants are directly detrimental to humans by causing respiratory irritation and possible alterations in the functioning of the lungs. Ozone and other oxidants can also enter the leaves of plants and reduce photosynthesis, which is the process that plants use to convert sunlight to energy to live and grow.

Ozone is not emitted directly into the air but is formed through a series of reactions involving reactive organic gases (ROG) and NO_X in the presence of sunlight. These chemicals are considered to be precursors of ozone, as their reaction leads to its formation. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_X includes various combinations of nitrogen and oxygen, including nitric oxide, NO_2, and others, typically resulting from the combustion of fuels.

Emissions of both ROG and NO_X are considered critical to ozone formation; therefore, either ROG or NO_X can limit the rate of ozone production. When the production rate of NO_X is lower, indicating that NO_X is scarce, the rate of ozone production is NO_X-limited. Under these circumstances, ozone levels could be most effectively reduced by lowering current and future NO_X emissions (from fuel combustion), rather than by lowering ROG emissions. Rural areas tend to be NO_X-limited, while areas with dense urban populations tend to be ROG-limited.

Ozone concentrations reflect an interplay of emissions of ozone precursors, transport, meteorology, and atmospheric chemistry. Meteorology and terrain play a major role in ozone formation. Generally, low wind speeds or stagnant air, coupled with warm temperatures and clear skies provide the optimum conditions for formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. Therefore, ozone is a regional pollutant that often affects large areas.

Individuals exercising outdoors, children, and people with lung disease, such as asthma and chronic pulmonary lung disease, are the most susceptible subgroups for ozone effects. Short-term ozone exposure (lasting for a few hours) can result in changes in breathing patterns, reductions in breathing capacity, increased susceptibility to infections, inflammation of lung tissue, and some immunological changes. A correlation has also been reported between elevated ambient ozone levels and increases in daily hospital admission rates and mortality (EPA 2022a). An increased risk of asthma has been found in children who participate in multiple sports and live within communities with high ozone levels.

Emissions of the ozone precursors ROG and NO_X have decreased in the past several years. According to the most recently published edition of California Air Resources Board (CARB) California Almanac of Emissions and Air Quality, NO_X, and ROG emissions levels in the Sacramento metropolitan area are projected to continue to decrease through 2035, largely because of more stringent motor vehicle standards and cleaner burning fuels, as well as rules for controlling ROG emissions from industrial coating and solvent operations (CARB 2013).

Carbon Monoxide. CO is a colorless and odorless gas that is primarily produced by the incomplete burning of carbon in fuels such as natural gas, gasoline, and wood, and is emitted by a wide variety of combustion sources, including on-road and non-road mobile sources, wood-burning stoves, incinerators, industrial sources, and wildfires. On-road and non-road mobile sources account for approximately 35 percent and 26 percent, respectively, of all CO emissions nationwide (EPA 2022b). Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Vehicle traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called “hot spots,” which can be hazardous to human receptors adjacent to the intersections.

Adverse health effects associated with exposure to high CO concentrations, typically only attainable indoors or within similarly enclosed spaces, include dizziness, headaches, and fatigue. CO exposure is especially harmful to unborn babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease (CARB 2022a).

Nitrogen Dioxide. NO_2 is one of a group of highly reactive gases known as oxides of nitrogen, or NO_X. NO_2 is formed when ozone reacts with nitric oxide (i.e., NO) in the atmosphere and is listed as a criteria pollutant because NO_2 is more toxic than nitric oxide. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. The combined emissions of nitric oxide and NO_2 are referred to as NO_X and reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with ozone, the NO_2 concentration in a geographical area may not be representative of local NO_X emission sources. NO_X also reacts with water, oxygen, and other chemicals to form nitric acids, contributing to the formation of acid rain.

Inhalation is the most common route of exposure to NO_2. Breathing air with a high concentration of NO_2 can lead to respiratory illness. Short-term exposure can aggravate respiratory diseases, particularly asthma, resulting in respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these subgroups (EPA 2021).

Sulfur Dioxide. SO_2 is one component of the larger group of gaseous oxides of sulfur (SO_X). SO_2 is used as the indicator for the larger group of SO_X, as it is the component of greatest concern and found in the atmosphere at much higher concentrations than other gaseous SO_X. SO_2 is typically produced by such stationary sources as coal and oil combustion facilities, steel mills, refineries, and pulp and paper mills. The major adverse health effects associated with SO_2 exposure pertain to the upper respiratory tract. On contact with the moist mucous membranes, SO_2 produces sulfurous acid, a direct irritant.

Concentration rather than duration of exposure is an important determinant of respiratory effects. Children, the elderly, and those who suffer from asthma are particularly sensitive to effects of SO_2 (EPA 2022c).

SO_2 also reacts with water, oxygen, and other chemicals to form sulfuric acids, contributing to the formation of acid rain. SO_2 emissions that lead to high concentrations of SO_2 in the air generally also lead to the formation of other SO_X, which can react with other compounds in the atmosphere to form small particles, contributing to particulate matter pollution, which can have health effects of its own.

Particulate Matter. PM refers to a complex mixture of small solid matter and fine droplets (aerosols) made up of several components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The major area-wide sources of $PM_{2.5}$ and PM_{10} are fugitive dust, especially from roadways, agricultural operations, and construction and demolition. Other sources of PM_{10} include crushing or grinding operations. $PM_{2.5}$ sources also include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes. Exhaust emissions from mobile sources contribute only a very small portion of directly emitted $PM_{2.5}$ and PM_{10} emissions. However, they are a major source of ROG and NO_X, which undergo reactions in the atmosphere to form PM, known as secondary particles. These secondary particles make up the majority of PM pollution.

The size of PM is directly linked to its potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller, because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects, even death. The adverse health effects of PM_{10} depend on the specific composition of the particulate matter. For example, health effects may be associated with metals, polycyclic aromatic hydrocarbons, and other toxic substances adsorbed onto fine PM (referred to as the “piggybacking effect”), or with fine dust particles of silica or asbestos. Effects from short- and long-term exposure to elevated concentrations of PM_{10} include respiratory symptoms, aggravation of respiratory and cardiovascular diseases, a weakened immune system, and cancer (World Health Organization 2021).

$PM_{2.5}$ poses an increased health risk because these very small particles can be inhaled deep in the lungs and may contain substances that are particularly harmful to human health. Direct emissions of $PM_{2.5}$ in the Sacramento metropolitan area decreased between 2000 and 2010 but are projected to increase very slightly between 2010 and 2035. Emissions of diesel particulate matter (DPM) decreased from 2000 through 2010 because of reduced exhaust emissions from diesel mobile sources and are anticipated to continue to decline through 2035 (CARB 2013).

Lead. Lead is a highly toxic metal that may cause a range of human health effects. Lead is found naturally in the environment and is used in manufactured products. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. Soon after its inception, EPA began working to reduce lead emissions, issuing the first reduction standards in 1973. Lead emissions decreased

substantially after the near elimination of leaded gasoline use. Metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Although the ambient lead standards are no longer violated, lead emissions from stationary sources still pose “hot spot” problems in some areas. As a result, CARB has identified lead as a Toxic Air Contaminant (TAC).

Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotients. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death, although it appears that lead does not directly affect the respiratory system.

Toxic Air Contaminants

In addition to criteria air pollutants, concentrations of TACs are also used as indicators of air quality conditions that can harm human health. According to the *California Almanac of Emissions and Air Quality* (CARB 2013), most of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines (i.e., DPM). Other TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.

DPM differs from other TACs because it is not a single substance, but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, type of lubricating oil, and presence or absence of an emission control system. Unlike the other TACs, no ambient monitoring data are available for DPM because no routine measurement method currently exists. However, emissions of DPM are forecasted to decline; it is estimated that emissions of DPM in 2035 will be less than half those in 2010, further reducing statewide cancer risk and non-cancer health effects (CARB 2013).

Another concern related to air quality is naturally occurring asbestos (NOA). Asbestos is a term used for several types of naturally occurring fibrous minerals found in many parts of California. When rock containing asbestos is broken or crushed, such as through construction-related ground disturbance or rock quarrying activities where NOA is present, asbestos fibers may be released and become airborne. Exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease which causes scarring of the lungs). Because asbestos is a known carcinogen, NOA is considered a TAC. NOA is typically associated with fault zones, and areas containing serpentinite or contacts between serpentinite and other types of rocks. According to the California Department of Conservation *Special Report*

192: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Eastern Sacramento County, California, the project site is located within an area categorized as least likely to contain NOA (California Department of Conservation 2006).

Existing Air Quality Conditions

Concentrations of emissions from criteria air pollutants are used to indicate the quality of the ambient air. Ambient air pollutant concentration monitoring data for the latest three years for which data is available (2018 through 2020) for the criteria pollutants for which the region is in nonattainment are provided in Table AQ-1. The data presented for ozone and $PM_{2.5}$ is based on monitoring results from the CARB monitoring site nearest the project site at 7250 Sloughhouse Road, Sloughhouse, California, approximately 1.2 miles northwest of the project site. The data presented for NO_2 is based on monitoring results from the CARB monitoring site at Sacramento-Del Paso Manor, located approximately 12.4 miles northwest of the project site. The data presented for PM_{10} is based on monitoring results from the CARB monitoring site at Sacramento-Branch Center Road #2, located approximately 8.6 miles northwest of the project site. The regional attainment status for each pollutant is described in Table AQ-2 below.

Table AQ-1: Local Air Quality Monitoring Summary

Pollutant and Averaging Period	Item	2018	2019	2020
Ozone 1 Hour	Max 1 Hour (ppm)	0.117	0.083	0.092
Ozone 1 Hour	Days > State Standard (0.09 ppm)	2	0	0
Ozone 8 Hour	Max 8 Hour (ppm)	0.098	0.071	0.077
Ozone 8 Hour	Days > State Standard (0.070 ppm)	4	2	6
Ozone 8 Hour	Days > National Standard (0.070 ppm)	4	1	5
NO_2 Annual	Annual Average (ppm)	.006	.006	.005
NO_2 1 Hour	Max 1 Hour (ppm)	0.042	0.051	0.046
NO_2 1 Hour	Days > State Standard (0.18 ppm)	0	0	0
PM_{10} Annual	Annual Average (µg/m^3)	27.4	*	*
PM_{10} 24 hour	Max 24 Hour (µg/m^3)	212.0	55.0	203.0
PM_{10} 24 hour	Days > State Standard (50 µg/m^3)	24.1	*	*
PM_{10} 24 hour	Days > National Standard (150 µg/m^3)	6.1	*	7.7
$PM_{2.5}$ Annual	Annual Average (µg/m^3)	12.2	4.8	11.8
$PM_{2.5}$ 24 hour	Max 24 Hour (µg/m^3)	147.4	23.2	126.0
$PM_{2.5}$ 24 hour	Days > National Standard (35 µg/m^3)	11.6	0.0	20.1

Source: CARB 2022b

Notes: ppm = parts per million; µg/m^3 = micrograms per cubic meter; - = insufficient data

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others, because of the types of population groups or activities involved. Children, pregnant women, the elderly, those with existing health conditions, and athletes or others who engage in

frequent exercise are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered sensitive receptors include schools, daycare centers, parks and playgrounds, and medical facilities.

Residential areas are considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to the pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution, even though exposure periods during exercise are generally short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent as the majority of the workers tend to stay indoors most of the time.

The project site is generally surrounded by agricultural land uses. Sensitive land uses in the project area include single-family residences south of the project site, to the north of the project site along Meiss Road, and east of the project site along Dillard Road. The nearest sensitive receptor to the proposed project facilities is a residence on Meiss Road that is within 50 feet of the project site, approximately 1,000 feet west of Dillard Road.

Regulatory Setting

The project site is within in the SVAB, in the eastern portion of the SMAQMD's jurisdictional boundary. The U.S. Environmental Protection Agency (EPA), CARB, and SMAQMD are responsible for regulating air quality in the vicinity of the project site. Each agency develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, in general, both state and local regulations may be more stringent. The regulatory frameworks for criteria air pollutants, TACs, and other emissions are described below.

Federal

The primary legislation that governs federal air quality regulations is the Clean Air Act (CAA), enacted in 1970 and amended by Congress most recently in 1990. The CAA established a cooperative federal-state program for protecting public health and welfare nationwide and establishing standards for certain common and widespread pollutants.

Criteria Air Pollutants

Under the CAA, EPA has established the national ambient air quality standards (NAAQS) for seven criteria air pollutants discussed previously: ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. The purpose of the NAAQS is two-tiered: primarily to protect public health, and secondarily to prevent degradation to the environment (i.e., impairment of visibility, damage to vegetation and property). The current primary and secondary NAAQS are

shown in Table AQ-2.[1] These health-based pollutant standards are reviewed with a legally prescribed frequency and are revised as warranted by new data on health and welfare effects. Each standard is based on a specific averaging time over which the concentration is measured. Different averaging times are based on protection from short-term, high-dosage effects or longer term, low-dosage effects.

The CAA requires EPA to determine if areas of the country meet the NAAQS for each criteria air pollutant. Areas are designated according to the following basic designation categories:

- **Attainment:** This designation signifies that pollutant concentrations in the area do not exceed the established standard. In most cases, a maintenance plan is required for a region after it has attained an air quality standard and is designated as an attainment or maintenance area after previously being designated as nonattainment. Maintenance plans are designed to ensure continued compliance with the standard.
- **Nonattainment:** This designation indicates that a pollutant concentration has exceeded the established standard. Nonattainment may differ in severity. To identify the severity of the problem and the extent of planning and actions required to meet the standard, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe, extreme).
- **Unclassifiable:** This designation indicates that insufficient data exist to determine attainment or nonattainment. For regulatory purposes, an unclassified area is generally treated the same as an attainment area.

As shown in Table AQ-3, the SMAQMD meets the NAAQS for all criteria air pollutants except ozone and $PM_{2.5}$. The CAA requires each state to prepare an air quality control plan, referred to as a state implementation plan (SIP) to demonstrate how attainment standards will be achieved.[2]

[1] Table AQ-2 also includes the California Ambient Air Quality Standards, described further below.

[2] The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and to determine whether implementing them will achieve ambient air quality standards. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area.

Table AQ-2: National and California Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS[1]	NAAQS[2,3]	
			Primary	Secondary
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	NA
CO	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	NA
NO_2	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	NA
NO_2	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
Ozone	1 hour	0.09 ppm (180 µg/m^3)	NA[5]	NA
Ozone	8 hour	0.070 ppm (137 µg/m^3)[8]	0.070 ppm (137 µg/m^3)[4]	Same as Primary
PM_{10}	24 hour	50 µg/m^3	150 µg/m^3	Same as Primary
PM_{10}	Annual Arithmetic Mean	20 µg/m^3 [6]	NA	NA
$PM_{2.5}$	24 hour	NA	35 µg/m^3	Same as Primary
$PM_{2.5}$	Annual Arithmetic Mean	12 µg/m^3 [6]	12 µg/m^3 [10]	15.0 µg/m^3
SO_2	1 hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	NA
SO_2	24 hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)	NA
SO^2	Annual Arithmetic Mean	NA	0.030 ppm (80 µg/m^3)	NA
Sulfates	24 hour	25 µg/m^3	NA	NA
H_2S	1 hour	0.03 ppm (42 µg/m^3)	NA	NA
Lead	30 day Average	1.5 µg/m^3	NA	NA
Lead	Calendar quarter	NA	1.5 µg/m^3	Same as Primary
Lead	Rolling [3] month Average	NA	0.15 µg/m^3 [9]	
Vinyl Chloride	24 hour	0.01 ppm (26 µg/m^3)	NA	NA
Visibility-Reducing Particles	8 hour	See Note 7	NA	NA

Source: CARB 2016

Key: µg/m^3 = micrograms per cubic meter; mg/m3 = milligrams per cubic meter; CO = carbon monoxide; NO_2 = nitrogen dioxide; O^3 = ozone; PM_{10} = particulate matter 10 microns in diameter or less; $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less; ppm = parts per million; ppb = parts per billion; SO_2 = sulfur dioxide; H_2S = hydrogen sulfide

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 visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.

2 National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.070 ppm (70 ppb) or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m^3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m^3. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.

3 National air quality standards are set by the USEPA at levels determined to be protective of public health with an adequate margin of safety.

4 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. USEPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.

5 The national 1-hour ozone standard was revoked by the USEPA on June 15, 2005.

6 In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.

7 Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

8 The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005 and became effective on May 17, 2006.

9 National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.

10 In December 2012, USEPA strengthened the annual $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) from 15.0 to 12.0 micrograms per cubic meter (µg/m^3). In December 2014, USEPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

Table AQ-3: Attainment Status for Federal and State Ambient Air Quality Standards

Pollutant	Federal Standard	State Standard
Ozone[a]	Nonattainment [1]	Nonattainment
Particulate Matter—10 Micrometers or Less	Attainment	Nonattainment
Particulate Matter—2.5 Micrometers or Less	Nonattainment	Attainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Unclassifiable/Attainment	Attainment
Sulfur Dioxide	Unclassifiable/Attainment	Attainment
Lead	Attainment	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates		Attainment
Visibility-Reducing Particles		Unclassified

Source: SMAQMD 2017a

1 This designation indicates that a pollutant concentration has exceeded the established standard

Toxic Air Contaminants

Air quality regulations also focus on hazardous air pollutants (HAPs), referred to at the state as TACs. These are a set of airborne pollutants that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. HAPs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; or short-term acute affects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

Stationary sources of HAPs include gasoline stations, dry cleaners, and diesel backup generators, among which are subject to permit requirements. On-road motor vehicles and off-road sources, such as construction equipment and trains, are also common sources of HAPs. In terms of health risks, the most volatile contaminants are diesel particulate matter (DPM), benzene, formaldehyde, 1,3-butadiene and acetaldehyde. Gasoline vapors contain several HAPs, including benzene, toluene, and xylenes. Public exposure to HAPs can result from emissions from normal operations, as well as accidental releases.

HAPs can be separated into carcinogens (cancer-causing) and non-carcinogens, based on the nature of the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Non-carcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. EPA regulates HAPs through statutes and regulations that generally require the use of the

maximum or best available control technology for toxics (MACT and BACT) to limit emissions.

The CAA requires EPA to identify and set national emissions standards for HAPs to protect public health and welfare. Emissions standards are set for what are called “major sources” and “area sources.” Major sources are defined as stationary sources with potential to emit more than 10 tons per year of any HAP or more than 25 tons per year of any combination of HAPs; all other sources are considered area sources. There are two types of emissions standards: those that require application of MACT and BACT, and those that are health-risk based and deemed necessary to address the risks that remain after implementation of MACT or BACT. For area sources, the MACT or BACT standards may be different because of differences in generally available control technology. The CAA also requires EPA to issue vehicle or fuel standards containing reasonable requirements that control toxic emissions of, at a minimum, benzene and formaldehyde. Performance criteria are established to limit mobile-source emissions of toxics.

State

CARB is responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA).

Criteria Air Pollutants

The CCAA, adopted in 1988, required CARB to establish California Ambient Air Quality Standard (CAAQS) (as shown above in Table AQ-2). CARB has also established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulate matter, in addition to the above-mentioned criteria air pollutants regulated by EPA. The CCAA requires that all air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practicable date. The CCAA specifies that local air districts should focus particular attention on reducing the emissions from transportation and areawide emission sources and provides districts with the authority to regulate indirect sources. CARB also maintains air quality monitoring stations throughout the state in conjunction with air districts. CARB uses the data collected at these stations to classify air basins as being in attainment or nonattainment with respect to each pollutant and to monitor progress in attaining air quality standards.

CARB is the lead agency for developing the SIPs in California. SIPs 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 rely on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB forwards SIP revisions to the EPA for approval and publication in the Federal Register. Most recently, in March 2017, CARB adopted the *2016 State Strategy for the State Implementation Plan* (State SIP Strategy), and in October 2018, adopted the *2018 Updates to the California State Implementation Plan* (2018 SIP Updates), describing the proposed commitment to

achieve the reductions necessary from mobile sources, fuels, and consumer products to meet federal ozone and $PM_{2.5}$ standards over the next 15 years.

CARB has established emission standards for vehicles sold in California and for various types of equipment. California gasoline specifications are governed by both state and federal agencies, which have imposed numerous requirements on the production and sale of gasoline in California during the past 30 years. In December 2004, CARB adopted a fourth phase of emission standards (Tier 4) in the Clean Air Non-road Diesel Rule that are nearly identical to those finalized by EPA earlier that year. The standards required engine manufacturers to meet after-treatment–based exhaust standards for NO_X and PM, starting in 2011, that were more than 90 percent lower than then-current levels, putting emissions from off-road engines virtually on par with those from on-road, heavy-duty diesel engines. CARB has also adopted control measures for DPM and more stringent emissions standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators).

In 2017, Senate Bill (SB) 1 (the Road Repair and Accountability Act of 2017) was passed, which, in addition to funding transportation-related projects, requires the Department of Motor Vehicles to refuse registration or renewal or transfer of registration for certain diesel-fueled vehicles, based on weight and model year, that are subject to specified provisions relating to the reduction of emissions of diesel particulate matter, oxides of nitrogen, and other criteria pollutants from in-use diesel-fueled vehicles. As of January 1, 2020, compliance with the CARB Truck and Bus regulation is now automatically verified by the California DMV as part of the vehicle registration process.

In June 2020, CARB approved the Advanced Clean Trucks regulation, requiring truck manufacturers to transition from diesel-powered trucks and vans to electric zero-emission trucks beginning in 2024 with phasing in of increasingly stringent requirements through 2045. By 2045, under the Advanced Clean Trucks regulation, every new truck sold in California will be zero-emission. This is a key element of CARB's strategy to achieve a transition in California's last mile delivery and local trucks from the use of conventional combustion technologies to zero emission everywhere feasible and near-zero emission powered by clean, low-carbon renewable fuels everywhere else. Promoting the development and use of advanced clean trucks will help CARB achieve its emission reduction strategies as outlined in the SIP, Sustainable Freight Action Plan, SB 350, and Assembly Bill (AB) 32.

Toxic Air Contaminants

As described under the federal regulations above, CARB regulates TACs, of which a subset of the identified substances are the federally identified and regulated HAPs, through statutes and regulations that generally require the use of MACT and BACT.

TACs in California are regulated primarily through the Tanner Air Toxics Act (Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act (Assembly Bill 2588; Chapter 1252, Statutes of 1987). The Air Toxics Hot Spots Information and Assessment Act seeks to identify and evaluate risks from air toxics sources, but does not regulate air toxics emissions. TAC emissions from individual

facilities are quantified and prioritized. “High-priority” facilities must perform a health risk assessment and, if specific thresholds are violated, must communicate the results to the public in the form of notices and public meetings. TACs are generally regulated through statutes and rules that require the use of MACT or BACT to limit TAC emissions.

According to the *California Almanac of Emissions and Air Quality* (CARB 2013), most of the estimated health risk from TACs is attributed to relatively few compounds, the most dominant being DPM. In 2000, CARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled vehicles and engines. Additional regulations apply to new trucks and diesel fuel. Subsequent CARB regulations on diesel emissions include the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-road Diesel Vehicle Regulation, and the New Off-road Compression Ignition Diesel Engines and Equipment Program. All of these regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment.

The State of California has also implemented regulations to reduce DPM emissions. Two such regulations applicable to the proposed project include Title 13, Sections 2485 and 2449 of the California Code of Regulations, which limit idling time to a maximum of 5 minutes for heavy-duty commercial diesel vehicles (defined as diesel vehicles heavier than 10,000 pounds gross vehicle rated weight) and off-road diesel-fueled construction vehicles, respectively. These regulatory measures are driven by the CARB Airborne Toxic Control Measure and subsequent amendments.

LOCAL

CRITERIA AIR POLLUTANTS

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

SMAQMD is responsible for monitoring air pollution within the SVAB and for developing and administering programs to reduce air pollution levels below the health-based standards established by the state and federal governments. All projects within SMAQMD’s jurisdictional area are subject to SMAQMD rules and regulations in effect at the time of construction. Specific SMAQMD rules that could be applicable include but are not limited to the following:

- **Rule 401:** Ringlemann Chart. A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three minutes in any one hour which is: as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or of such opacity as to obscure a human observer's view, or a certified calibrated in-stack opacity monitoring system to a degree equal to or greater than does smoke described in Subsection 301.1 of this rule.
- **Rule 402:** Nuisance. A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury,

detriment, nuisance, or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.

- **Rule 403:** Fugitive Dust. A person shall take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line from which the emission originates, from any construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation. Reasonable precautions shall include, but are not limited to:
    - Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the construction of roadways or the clearing of land.
    - Application of asphalt, oil, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which can give rise to airborne dusts; and
    - Other means approved by the Air Pollution Control Officer.
- **Rule 404:** Particulate Matter. Except as otherwise provided in Rule 406 of this regulation, a person shall not discharge into the atmosphere from any source particulate matter in excess of 0.23 grams per dry standard cubic meter (0.1 grains per dry standard cubic foot).
- **Rule 405:** Dust and Condensed Fumes. A person shall not discharge into the atmosphere in any one hour from any source whatsoever dust or condensed fumes in total quantities in excess of the amount shown in the Rule's Table for Process Weight and Allowable Discharge.
- **Rule 442:** Architectural Coatings. Limit the emissions of VOCs from the use of architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the SMAQMD.
- **Rule 201:** General Permit Requirements. To provide an orderly procedure for the review of new sources of air pollution and of the modification and operation of existing sources through the issuance of permits.

SMAQMD has also produced a guidebook called the *CEQA Guide to Air Quality Assessment in Sacramento County* (CEQA Guide), which contains guidance for analyzing construction and operational emissions (SMAQMD 2021). The CEQA Guide provides methods to analyze air quality impacts from plans and projects, including screening criteria, thresholds of significance, calculation methods, and mitigation measures to assist lead agencies in complying with CEQA. In developing the thresholds, SMAQMD took into account health-based air quality standards and the strategies to attain air quality standards, emissions projections and regional growth and land use trends.

As part of the Sacramento Federal Nonattainment Area (SFNA) for ozone, and in accordance with requirements under the CAA, SMAQMD worked with the other local air

districts within the Sacramento region (El Dorado County Air Quality Management District, Feather River Air Quality Management District, Placer County Air Pollution Control District, and Yolo-Solano Air Quality Management District) to develop a regional air quality management plan to describe and demonstrate how the Sacramento Federal Nonattainment Area, is meeting requirements under the federal CAA in demonstrating reasonable further progress and attainment of the NAAQS for ozone (SMAQMD 2017b). Some elements of the Ozone Attainment and Progress Plan were updated in 2018 and included in the 2018 Updates to the California State Implementation Plan, which updated SIP elements for nonattainment areas throughout the state, as needed. These updates were adopted by CARB in October 2018. The Ozone Attainment and Progress Plan is the currently adopted and applicable air quality plan for the region.

Similarly, the region prepared the $PM_{2.5}$ Maintenance Plan and Redesignation Request (SMAQMD 2013) to address how the region attained and would continue to attain the 24-hour $PM_{2.5}$ standard. In 2017, EPA found that the area attained the 2006 24-hour $PM_{2.5}$ NAAQS by the attainment date of December 31, 2015. The $PM_{2.5}$ Maintenance Plan and Redesignation Request will be updated and submitted in the future based on the clean data finding made by the EPA.

The SMAQMD also prepared the PM_{10} Implementation/Maintenance Plan and Redesignation Request for Sacramento County (SMAQMD 2010). EPA approved the PM_{10} Plan, which allowed EPA to proceed with the redesignation of Sacramento County as attainment for the PM_{10} NAAQS. The approval of the first Maintenance Plan showed maintenance from 2013 through 2023. A second plan must provide for maintenance of the NAAQS for 10 more years after expiration of the first 10-year maintenance period. The SMAQMD adopted and submitted the Second 10-Year PM_{10} Maintenance Plan for Sacramento County in August of 2021 to demonstrate maintenance of the PM_{10} standard through 2033.

COUNTY OF SACRAMENTO GENERAL PLAN

The following policies from the "Air Quality" Element of the County of Sacramento General Plan (County of Sacramento 2020) may be applicable to the project.

Goal: Improve air quality to promote the public health, safety, welfare, and environmental quality of the community.

AQ-3. Buffers and/or other appropriate exposure reduction measures shall be established on a project-by project basis and incorporated during review to provide for protection of sensitive receptors from sources of air pollution or odor. The CARB's "Strategies to Reduce Air Pollution Exposure Near High Volume Roadways" Technical Advisory and the SMAQMD's "Mobile Sources Air Toxics Protocol" or applicable SMAQMD guidance shall be utilized when establishing these exposure reduction measures.

AQ-4. Developments which meet or exceed thresholds of significance for ozone precursor pollutants, and/or Greenhouse Gases (GHG) as adopted by the SMAQMD, shall be deemed to have a significant environmental impact. An Air

Quality Mitigation Plan and/or a GHG Reduction Plan shall be submitted to the County of Sacramento prior to project approval, subject to review and recommendation as to technical adequacy by the SMAQMD.

AQ-11. Encourage contractors operating in the county to procure and to operate low-emission vehicles, and to seek low emission fleet status for their off-road equipment.

AQ-16. Prohibit the idling of on-and off-road engines when the vehicle is not moving or when the off-road equipment is not performing work for a period of time greater than five minutes in any one-hour period.

AQ-19. Require all feasible reductions in emissions for the operation of construction vehicles and equipment on major land development and roadway construction projects.

AQ-21. Support SMAQMD's particulate matter control measures for residential wood burning and fugitive dust.

Toxic Air Contaminants

At the local level, air pollution control or management districts may adopt and enforce CARB control measures. Under SMAQMD Rule 201 (General Permit Requirements), Rule 202 (New Source Review), and Rule 207 (Federal Operating Permit Program), all sources that could emit TACs must obtain permits from SMAQMD.

Odors

Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and SMAQMD. SMAQMD Rule 402 (Nuisance) regulates odorous emissions.

Impacts And Analysis

Significance Criteria

An air quality impact would be considered significant if it would exceed any of the thresholds of significance listed below, which are based on Appendix G of the CEQA Guidelines and on SMAQMD's CEQA Guide (SMAQMD 2021). Based on Appendix G of the CEQA Guidelines, the proposed project would result in a significant impact on air quality if it would:

- conflict with or obstruct implementation of the applicable air quality plan;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard;

- expose sensitive receptors to substantial pollutant concentrations; or
- result in other emissions (such as those leading to odors) adversely affecting a substantial number or people.

As stated in Appendix G of the CEQA Guidelines, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations. Thus, pursuant to the SMAQMD-recommended thresholds for evaluating project-related air quality impacts, the proposed project would result in a significant impact on air quality if it would:

- generate construction-related criteria air pollutant or ozone precursor emissions that exceed 85 pounds per day for NO_X, or, after implementation of best management practices (BMPs), 80 pounds per day or 14.6 tons per year of PM_{10} and 82 pounds per day or 15 tons per year of $PM_{2.5}$;
- generate long-term regional criteria air pollutant or ozone precursor emissions that exceed 65 pounds per day of ROG or NO_X, 80 pounds per day or 14.6 tons per year of PM_{10} and 82 pounds per day or 15 tons per year of $PM_{2.5}$;
- generate emissions of toxic air contaminants that would cause an excess cancer risk level of more than 10 in in one million or exceed a noncarcinogenic[3] Hazard Index of 1; or
- result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

For cumulative impacts, SMAQMD states that, as a result of the District's approach to thresholds of significance, if a project's emissions are not anticipated to exceed the SMAQMD-recommended thresholds, as listed above, the project would not be expected to result in a cumulatively considerable contribution to a significant impact at a cumulative level (SMAQMD 2020).

METHODOLOGY

Regional and local criteria air pollutant emissions and associated impacts, as well as impacts from TACs, and odors were assessed in accordance with Sacramento County and SMAQMD-recommended methodologies. The project's construction, decommissioning, and operational emissions were compared to SMAQMD's construction and operational thresholds. The California Emissions Estimator Model (CalEEMod)

[3] Noncarcinogenic or noncancer effects are those effects other than cancer, such as emphysema or reproductive disorders that can be associated with substantial pollutant concentrations.

Version 2020.4.0[4] and OFFROAD2021[5] was used to estimate emissions from construction, operation, and decommissioning of the project. Construction was assumed to commence in May 2022 through December 2022.[6] As such, the first operational year of the project was assumed to be 2023. Project decommissioning activities are anticipated to occur 30 years after the project becomes operational, beginning in January 2053 and ending November 2053.

Construction and decommissioning activities would require the use of off-road equipment including skid loaders, rough terrain forklifts, graders, scrapers, bulldozers, rollers, tractors/loaders/backhoes, excavators, rollers, plate compactors, cranes, and all-terrain vehicles. Project construction would also require the export of 78,000 cubic yards of soil during site preparation activities. The analysis conservatively assumed a 75-mile one-way trip distance to Vallejo for off-site disposal. Since the truck trips would potentially travel outside of the SMAQMD jurisdiction for disposal of the soil, emissions associated with the haul trucks were apportioned to the surrounding air districts of Bay Area Air Quality Management District (BAAQMD) and Yolo-Solano Air Quality Management District (YSAQMD) for comparison to their recommended thresholds of significance. Additionally, it was assumed that worker vehicles would travel on average approximately half a mile on unpaved roads over the course of construction to account for travel to laydown locations.

Operational activities would include regular inspection and maintenance activities associated with operation of the facility. It is anticipated that inspection and maintenance activities would require up to 10 trips per day. The operational analysis also accounted for area-source emissions associated with VOC off-gassing emissions from reapplication of surface coatings for the energy storage system and landscape/maintenance equipment.

[4] CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant and GHG emissions associated with construction activities and operation of a variety of land use projects, such as residential, commercial, and industrial facilities. CalEEMod input parameters, including the land use type used to represent the project and its size, construction schedule, and anticipated use of construction equipment, were based on information provided by the applicant or default model assumptions if project specifics were unavailable. In June 2022, CAPCOA released a new version of CalEEMod, version 2022.1. At the time of this analysis, CalEEMod version 2022.1, was still in a soft release stage; therefore, this analysis utilized CalEEMod version 2020.4.0.

[5] OFFROAD is CARB's emissions inventory database for off-road diesel engines, used to quantify the amount of pollutants from thousands of engines in equipment used in industrial applications, agriculture, construction, mining, oil drilling, power generation, and many other industries. OFFROAD2021 is anticipated to be the most current available and approved source to be used to generate emissions factors for the all-terrain vehicles (ATVs) anticipated to be used for the project.

[6] As construction occurs in later years, exhaust-related emissions are anticipated to result in lower levels of emissions. Therefore, actual emissions from the construction activities may be lower than what was quantified due to advancements in engine technology, retrofits, and equipment fleet turnover as stricter regulatory standards take effect since construction activities would occur after May 2022.

For additional details regarding the air quality methodology and assumptions, please refer to Appendix AQ-1, *Air Quality and Greenhouse Gas Emission Calculations Technical Memorandum for the Sloughhouse Solar Project – NOP Project Description*.

TAC emissions associated with project construction and operation that could affect surrounding areas are evaluated qualitatively. The potential for the project to result in other emissions, such as those leading to odors, is also evaluated qualitatively.

IMPACT AQ-1: CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE APPLICABLE AIR QUALITY PLAN

Air quality plans describe air pollution control strategies to be implemented by a city, county, or regional air district. The primary purpose of an air quality plan is to bring an area that does not attain the NAAQS or CAAQS into compliance with those standards, or to maintain existing compliance with those standards, pursuant to the requirements of the CAA and CCAA.

CONSTRUCTION AND DECOMMISSIONING

Construction and decommissioning activities associated with the proposed project would result in emissions of criteria air pollutants and ozone precursors, including ROG, NO_X, PM_{10}, and $PM_{2.5}$, the pollutants for which the project region is designated as nonattainment under either the NAAQS or CAAQS. SMAQMD has adopted air quality plans pursuant to regulatory requirements under EPA and CARB for the attainment and maintenance of federal and state ambient air quality standards, as detailed above in "Regulatory Setting," under "Sacramento Metropolitan Air Quality Management District." The goal of the air quality plans is to reduce criteria air pollutant emissions for which the SVAB is designated as nonattainment in order to achieve NAAQS and CAAQS by the earliest practicable date. As documented in the SMAQMD CEQA Guide (SMAQMD 2021), the SMAQMD construction and operational mass emissions thresholds for ozone precursors correlate to the NO_x and ROG reductions from heavy-duty vehicles and land use project emission reduction requirements committed to in the 2004 Ozone Attainment Plan for the Sacramento Federal Ozone Nonattainment Area; therefore, projects whose emissions would be less than the recommended thresholds of significance for criteria air pollutants would not conflict with or obstruct implementation of applicable air quality plans related to the attainment of ozone. Similarly, the construction and operational mass emissions thresholds for PM correlate to the SMAQMD's permitting offset trigger levels[7] and represent the emission levels above which a project's individual emissions would result in an individually or cumulatively considerable contribution to the County's existing air quality conditions. These emission levels prevent deterioration of ambient air quality and a regionally cumulative significant impact by ensuring projects do not worsen the

[7] SMAQMD rules require stationary sources that emit pollutants in excess of certain levels to implement best available control technology (BACT) and provide offsets. The PM BACT threshold is zero, and the offset threshold is 14.6 tons per year for PM_{10} and 15 tons/year for $PM_{2.5}$. Requiring projects to implement BACT and best management practices is reasonable because it mirrors the CAA approach to reducing emissions and attaining the federal CAA standards.

region's attainment status (SMAQMD 2015). Therefore, projects whose emissions do not exceed the recommended PM thresholds of significance would also not conflict with or obstruct implementation of the applicable air quality plans related to PM.

Construction activities associated with the proposed project would result in a temporary increase in criteria pollutant and ozone precursor emissions in the form of both fugitive dust from ground disturbing activities, including site preparation, grading, and travel on paved and unpaved roadways, and exhaust emissions from the use of construction equipment and operation of worker vehicles and vendor and haul trucks.

Decommissioning activities would also result in a temporary increase in criteria air pollutant and ozone precursor emissions associated with fugitive dust during system removal and demolition, site restoration, and travel on paved and unpaved roadways, and exhaust emissions from the use of construction equipment and operation of worker vehicles and vendor and haul trucks.

The proposed project construction-related and decommissioning activities will be required to comply with SMAQMD rules and regulations established, in part, to ensure implementation of and consistency with strategies and actions of the applicable air quality plans, including but not limited to Rule 401, Rule 402, Rule 403, Rule 404, and Rule 405. Since the project would generate PM emissions during construction and decommissioning activities, implementation of best management practices would be required in order to use the SMAQMD non-zero thresholds of significance for PM. As detailed below in Impact AQ-2 and shown in Table AQ-4, emissions generated during construction could exceed the SMAQMD thresholds of significance for NO_X and PM_{10}. Therefore, the project's construction and decommissioning activities could result in a potentially significant temporary contribution to regional air pollution and thereby could conflict with air quality plans applicable to the SMAQMD. Similarly, for these same reasons, project construction would not be consistent with the applicable County General Plan policies related to air quality. This impact would be **potentially significant**.

Operations

Operational activities associated with the project would include regular inspection and maintenance activities, as detailed in Appendix AQ-1. As detailed below in Impact AQ-2 and shown in Table AQ-7, proposed operational activities would result in the generation of criteria air pollutant emissions. Since the project would generate PM emissions during operation, implementation of best management practices would be required in order to use the SMAQMD non-zero thresholds of significance for PM. As shown in Table AQ-7, operational emissions would not exceed the recommended SMAQMD thresholds of significance. In addition, operation of the project would result in the generation of energy from a renewable, carbon-free resource that would support the increasing contribution of clean energy resources to the overall regional power mix and related reduction in criteria air pollutants emissions associated with energy generation. While the project may not result in a direct offset of energy-related criteria air pollutant emissions in the region, and such emissions 'credits' were not accounted for in the net operational emissions calculations, the operation of the project would provide a source of electricity that does not generate criteria air pollutant emissions.

However, since the project's operational activities would generate PM emissions during routine maintenance activities, the proposed project may conflict with or obstruct implementation of applicable air quality plans if the applicable best management practices were not implemented. This impact would be **potentially significant**.

Mitigation Measures

The following recommended mitigation measures are detailed below under the discussion of **Impact AQ-2: Mitigation Measures AQ-2a through AQ-2f.**

- Implement Mitigation Measures AQ-2a, AQ-2b, AQ-2c, AQ-2d, AQ-2e, and AQ-2f.

Significance after Mitigation

Construction

Mitigation Measure AQ-2a includes the SMAQMD Basic Construction Measures/BMPs for fugitive dust control, as well as Enhanced Fugitive PM Dust Control Practices, to reduce the generation of on-site fugitive dust during earthwork and travel on unpaved roadways, to maintain equipment in good operating condition, and minimize equipment idling times as required by California Code of Regulations. Mitigation Measure AQ-2b requires that off-road diesel-powered equipment greater than 50 horsepower used for construction activities meet or exceed Tier 4 Final emission standards. Mitigated emissions estimates are provided under the discussion of Impact AQ-2 in Table AQ-8, based on implementation of Mitigation Measures AQ-2a and AQ-2b. As shown in Table AQ-8, emissions of NO_X and PM_{10} would still exceed SMAQMD's thresholds of significance. Mitigation Measure AQ-2c would reduce NO_x and PM_{10} emissions (exhaust) from on-road vehicle activity by requiring the use of 2010 or newer diesel-powered heavy-duty trucks during construction of the project. Mitigation Measure AQ-2d would require the construction contractor to submit a Construction Emissions Control Plan, consisting of the proposed equipment inventory, proposed heavy-duty vehicle fleet, and calculation of the project's construction emissions for comparison to the SMAQMD's thresholds of significance. Mitigation Measure AQ-2e would require participation in the SMAQMD's off-site mitigation fee program through the purchase of the required offsets needed based on the construction emission calculation, as required by Mitigation Measure AQ-2d and the SMAQMD's offset mitigation fee program and would ensure that NO_X and PM_{10} emissions would be offset to a level that would not exceed the SMAQMD thresholds of significance for NO_X and PM_{10}. Therefore, with implementation of Mitigation Measures AQ-2a through AQ-2e, the project's construction and decommissioning emissions would be reduced to a level below the thresholds of significance, would not conflict with air quality plans applicable to the SMAQMD, and would be consistent with the applicable County General Plan policies related to air quality. This impact would be **less than significant with mitigation.**

Operations

As described below under Impact AQ-2, project operational emissions associated with routine maintenance activities could generate PM emissions that would exceed the SMAQMD's threshold for PM emissions. Therefore, implementation of Mitigation

Measure AQ-2f would be required to utilize the SMAQMD's non-zero thresholds. With implementation of Mitigation Measure AQ-2f, best management practices would be implemented such that the project's operational PM emissions associated with routine maintenance activities would be reduced to a level below the threshold of significance. As such, the project's operational emissions would also not conflict with air quality plans applicable to the SMAQMD. This impact would be **less than significant with mitigation.**

IMPACT AQ-2: 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

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the SVAB, and this regional impact is cumulative rather than being attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects.

The thresholds developed by the SMAQMD are designed to identify those projects that would result in significant levels of air pollution and to assist the region in attaining the applicable state and federal ambient air quality standards. Projects that would exceed the SMAQMD-recommended thresholds of significance would be considered to potentially contribute a cumulatively considerable net increase of criteria air pollutant emissions to the region.

CONSTRUCTION AND DECOMMISSIONING

Construction- and decommissioning related emissions are temporary and would cease after the completion of the project's construction phase but have the potential to adversely affect the region's air quality.

The project's maximum daily and annual emissions associated with construction and decommissioning activities are presented below in Table AQ-4, and compared to the SMAQMD-recommended thresholds of significance for construction. As described above under "Significance Criteria," the SMAQMD recommended thresholds of significance for PM are 80 pounds per day or 14.6 tons per year of PM_{10} and 82 pounds per day or 15 tons per year of $PM_{2.5}$, after implementation of BMPs. The BMPs are Basic Construction Emission Control Practices that are considered feasible for controlling fugitive dust from a construction site, allowing the use of the non-zero PM significance threshold. Consistent with the SMAQMD CEQA Guide, these BMPs have been included as a Mitigation Measure (see Mitigation Measure AQ-2a below) to ensure compliance.

Table AQ-4: Summary of Maximum Daily and Annual Construction- and Decommissioning Related Emissions of Criteria Air Pollutants and Precursors

Description	ROG (lbs/day)	NO_X (lbs/day)	PM_{10} [1] (lbs/day)	$PM_{2.5}$ [1] (lbs/day)	PM_{10} [1] (tons/year)	$PM_{2.5}$ [1] (tons/year)
Construction Emissions	**51.36**	**218.48**	**104.39**	**21.25**	**4.23**	**0.88**
SMAQMD Threshold of Significance	N/A	85	80	82	14.6	15
Threshold Exceeded?	N/A	**Yes**	**Yes**	No	No	No
Decommissioning Emissions	**21.94**	**33.29**	**28.18**	**4.51**	**1.58**	**0.25**
SMAQMD Threshold of Significance	N/A	85	80	82	14.6	15
Threshold Exceeded?	N/A	No	No	No	No	No

Notes: ROG = reactive organic gases; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 micrometers in diameter; $PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter; SMAQMD = Sacramento Metropolitan Air Quality Management District

[1] PM emissions include implementation of fugitive dust control measures listed as BMPs; therefore, this analysis utilized the non-zero SMAQMD recommended PM significance threshold.

Source: See Appendix AQ-1 for detailed construction assumptions and calculations.

As described previously, truck trips would potentially travel outside of the SMAQMD jurisdiction for disposal of the excavated soil. As such, mobile source emissions associated with the haul truck trips were apportioned to the surrounding air districts of the YSAQMD and BAAQMD for comparison to their respective recommended thresholds of significance. Table AQ-5 and Table AQ-6 present the emissions associated with the haul truck trips required during construction for comparison to the YSAQMD and BAAQMD recommended thresholds of significance, respectively.

Table AQ-5: Summary of Maximum Daily Haul Truck Trip Related Criteria Air Pollutants and Precursors for Comparison to YSAQMD Thresholds

Emissions Source	ROG (tons/year)	NO_X (tons/year)	PM_{10} (lbs/day)
Emissions	0.03	1.46	14.87
YSAQMD Threshold of Significance	10	10	80
Threshold Exceeded?	No	No	No

Notes:

lbs/day = pounds per day; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 micrometers in diameter; $PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter; ROG = reactive organic gases; YSAQMD = Yolo-Solano Air Quality Management District

Source: See Appendix AQ-1 for detailed construction assumptions and calculations.

Table AQ-6: Summary of Maximum Daily Haul Truck Trip Related Criteria Air Pollutants and Precursors for Comparison to BAAQMD Thresholds

Emissions Source	ROG (lbs/day)	NO_X (lbs/day)	PM_{10} Exhaust (lbs/day)	$PM_{2.5}$ Exhaust (lbs/day)
Emissions	**0.96**	**43.55**	**0.35**	**0.34**
BAAQMD Threshold of Significance [1]	54	54	82	54
Threshold Exceeded?	No	No	No	No

Notes:
BAAQMD = Bay Area Air Quality Management District; lbs/day = pounds per day; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 micrometers in diameter; $PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter; ROG = reactive organic gases;
[1] This analysis conservatively compares maximum daily emissions for haul trips to the BAAQMD's average daily emissions thresholds.
Source: See Appendix AQ-1 for detailed construction assumptions and calculations.

As shown in Table AQ-5 and Table AQ-6, emissions that may occur in the surrounding air districts would not exceed the recommended thresholds of significance. However, as shown in Table AQ-4, the project's maximum daily construction emissions would exceed the SMAQMD's recommended thresholds for NO_X, an ozone precursor, and PM_{10}. This level of emissions would result in a potentially significant impact due to the region's non-attainment status for ozone and PM_{10}. The SMAQMD thresholds of significance are considered the allowable amount of emissions each project can generate without resulting in a cumulatively considerable net increase of criteria air pollutants and precursor emissions. Consequently, because construction of the project could generate construction-related emissions that exceed the SMAQMD-recommended thresholds, this impact for the construction phase of the project would be **potentially significant**.

OPERATIONS

Operational emissions would result from daily routine and maintenance activities, such as panel washing. Maximum daily emissions (in pounds per day) and annual emissions (in tons per year) are presented in Table AQ-7.

Table AQ-7: Summary of Maximum Daily and Annual Operational Emissions of Criteria Air Pollutants and Precursors

Emissions Source	ROG (lbs/day)	NO_X (lbs/day)	PM_{10} [1] (lbs/day)	$PM_{2.5}$ [a] (lbs/day)	PM_{10} [1] (tons/year)	$PM_{2.5}$ [1] (tons/year)
Emissions	**0.16**	**0.05**	**0.07**	**0.02**	**0.01**	**<0.01**
SMAQMD Threshold of Significance	65	65	80	82	14.6	15
Threshold Exceeded?	N/A	No	No	No	No	No

Notes:
BMP = best management practices; lbs/day = pounds per day; NO_X = nitrogen oxides; PM = particulate matter; PM_{10} = particulate matter less than 10 micrometers in diameter; $PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter; ROG = reactive organic gases; SMAQMD = Sacramento Metropolitan Air Quality Management District; tons/year = tons per year
[1] This analysis utilized the non-zero SMAQMD recommended PM significance threshold; therefore, implementation of BMPs is required.
Source: See Appendix AQ-1 for detailed construction assumptions and calculations.

As shown in Table AQ-7, maximum daily and annual operational emissions would not exceed the SMAQMD-recommended thresholds of significance. Since the project would generate PM emissions during operation, implementation of BMPs would be required in order to use the SMAQMD non-zero thresholds of significance. Therefore, this impact would be **potentially significant** without implementation of BMPs.

Mitigation Measures

AQ-2a. Implement Basic Construction Emission Control Practices (Best Management Practices) and Enhanced Fugitive PM Dust Control Practices during Construction and Decommissioning.

- The applicant shall include as a condition of the construction and decommissioning bidding, incorporation of dust control measures that shall include, at a minimum, the requirements of SMAQMD Rule 403. All fugitive dust control measures shall be shown on grading, improvement, and demolition plans, to be initiated at the start and maintained throughout the duration of construction and decommissioning.

- Water all exposed active work areas two times daily, or with adequate frequency for continued moist soil. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads. However, do not overwater to the extent that sediment flows off the site.

- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.

- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.

- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).

- Suspend excavation, grading, and/or demolition activity when average wind speeds exceed 20 mph.

- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

- Install wheel washers, rattle plates and/or rock aprons for all exiting trucks or equipment leaving the site.

- Treat site accesses from the paved road with a 6 to 12- inch layer of gravel to reduce generation of road dust and road dust carryout onto public roads.

- Post a publicly visible sign with the telephone number and person to contact at the County of Sacramento regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number of the SMAQMD shall also be visible to ensure compliance.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.

- Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2449 and 2449.1]. For more information contact CARB at 877-593-6677, doors@arb.ca.gov, or www.arb.ca.gov/doors/compliance_cert1.html.

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

AQ-2b. Reduce Construction Equipment Exhaust-Related Emissions during Construction.

- The applicant shall require off-road diesel-fueled equipment with engines larger than 50 horsepower have engines that meet or exceed EPA/CARB Tier 4 Final emissions standards. An exemption from these requirements may be granted by the County if the County documents that equipment with the required tier is not reasonably available and corresponding reductions in criteria air pollutant emissions are achieved from other construction equipment (see completion of the Construction Emissions Control Plan in Mitigation Measure AQ-2d below). Before an exemption may be considered by the County, the applicant shall be required to demonstrate that two construction fleet owners/operators in Sacramento County were contacted and that those owners/operators confirmed Tier 4 equipment could not be located within Sacramento County.

AQ-2c. Reduce Haul Truck Trip Exhaust-Related Emissions during Construction.

- The applicant shall require the use of 2010 or newer diesel-powered heavy-duty trucks during construction of the project. An exemption from these requirements may be granted by the County if the County documents that trucks with the required model year engine are not reasonably available and corresponding reductions in criteria air pollutant emissions are achieved from other construction equipment (see completion of the Construction Emissions Control Plan below). Before an exemption may be considered by the County, the applicant shall be required to demonstrate that two construction fleet owners/operators in Sacramento County were contacted and that those owners/operators confirmed 2010 or newer trucks could not be located within Sacramento County.

AQ-2d. Submit a Construction Emissions Control Plan.

- Prior to the approval of grading plans, the construction contractor shall submit a Construction Emissions Control Plan to the SMAQMD and provide written evidence to the County of Sacramento that the plan has been submitted to and approved by SMAQMD. The applicant shall not initiate any on-site or off-site construction activity until SMAQMD has approved the Construction Emissions Control Plan.

  The Construction Emissions Control Plan shall include the following:

  - The contractor shall submit to the SMAQMD a comprehensive equipment inventory (e.g., make, model, year, emission (tier) rating, projected hours of use, and CARB equipment identification number) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used. If any new equipment is added after submission of the inventory, the contractor shall notify the SMAQMD before the new equipment being utilized. At least three business days before the use of subject heavy-duty off-road equipment, the project representative shall provide the SMAQMD with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and on-site foreman.
  - The contractor shall submit to the SMAQMD an anticipated off-site heavy-duty truck trip activity schedule (duration of truck trip activity, anticipated origin/destination of truck trips, and estimated total and daily truck trips per day) and anticipated truck fleet inventory (e.g., make, model, engine year).
  - With submittal of the equipment inventory and anticipated on-road heavy-duty truck trip activity, the contractor shall provide a written calculation of the project's total and daily construction emissions to the SMAQMD for approval. If any new equipment or haul truck activity is added after the submission and approval of the inventory, the construction contractor shall update the inventory and construction emissions calculations and provide to the SMAQMD and County of Sacramento prior to the use of such equipment and trucks. The emissions calculations shall be calculated using the SMAQMD's Construction Mitigation Calculator; this tool is currently available on the SMAQMD's website at the following link: http://www.airquality.org/businesses/ceqa-land-use-planning/mitigation.

AQ-2e. Off-site Construction Mitigation.

- If, based upon the incorporation of all measures described above in Mitigation Measures AQ-2a through AQ-2d, NO_X or PM_{10} emissions still do not meet the daily SMAQMD thresholds, the project shall participate in the SMAQMD's Offsite Mitigation Program by paying to SMAQMD a mitigation fee for construction activities, to be determined at the time of construction based on the submitted equipment inventory and heavy-duty truck activity and emissions calculations for NO_X and PM_{10} emissions, such that emissions are reduced to a less-than-

significant level. The fee calculation to mitigate daily emissions shall be based on the SMAQMD mitigation fee rate, which is reviewed and adjusted annually, if needed. The current mitigation fee rate is $30,000 per ton of emissions with a 5 percent administrative fee in addition to the mitigation fee. The total fee shall be determined based on the total emissions reductions of NO_X and PM_{10} needed to reduce emissions to be less than the SMAQMD thresholds of 85 pounds per day for NO_X and 80 pounds per day for PM_{10}. The fee shall be submitted for approval by SMAQMD as the total required to achieve emissions reductions that would reduce total emissions to a less-than-significant level after all other mitigation measures are implemented. The fee shall be calculated, approved by SMAQMD, and paid prior to the issuance of grading or improvement plans.

AQ-2f. Implement Best Management Practices for Reducing Operational PM Emissions

- The applicant shall include as a condition of building permit, the following best management practices for fugitive dust control during operational and maintenance activities associated with the project:

- Limit vehicle speeds on unpaved roads to 15 mph.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.

- Compliance with anti-idling regulations for diesel powered commercial motor vehicles (greater than 10,000 gross vehicular weight rating). The current requirements include limiting idling time to 5 minutes and installing technologies on the vehicles that support anti-idling. Information can be found on the California Air Resources Board's website: https://ww2.arb.ca.gov/ourwork/programs/idle-reduction-technologies/idle-reduction-technologies.

SIGNIFICANCE AFTER MITIGATION

CONSTRUCTION

Project construction activities would result in NO_X and PM_{10} emissions that would exceed SMAQMD-recommended thresholds of significance. Mitigation Measure AQ-2a includes the SMAQMD Basic Construction Measures/BMPs for fugitive dust control, as well as Enhanced Fugitive PM Dust Control Practices, to reduce the generation of on-site fugitive dust during earthwork and travel on unpaved roadways, to maintain equipment in good operating condition, and minimize equipment idling times as required by California Code of Regulations. Mitigation Measure AQ-2b requires that off-road diesel-powered equipment greater than 50 horsepower used for construction activities meet or exceed Tier 4 Final emission standards. Mitigated emissions estimates are shown in Table AQ-8, based on implementation of Mitigation Measures AQ-2a and AQ-2b.

Table AQ-8: Summary of Mitigated Maximum Daily Construction-Related Emissions of Criteria Air Pollutants and Precursors

Emissions Source	ROG (lbs/day)	NO_X (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Emissions	**44.56**	**130.42**	**100.51**	**17.70**
SMAQMD Threshold of Significance	N/A	85	80	82
Threshold Exceeded?	N/A	**Yes**	**Yes**	No

Notes:
lbs/day = pounds per day; N/A = not applicable; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 micrometers in diameter; $PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter; ROG = reactive organic gases; SMAQMD = Sacramento Metropolitan Air Quality Management District

Source: See Appendix AQ-1 for detailed construction assumptions and calculations.

As shown in Table AQ-8, Mitigation Measures AQ-2a and AQ-2b would reduce NO_X and PM_{10} emissions associated with project construction. However, even with inclusion of these mitigation measures, emissions of NO_X and PM_{10} would still exceed SMAQMD's thresholds of significance. Mitigation Measure AQ-2c would reduce NO_x and PM_{10} emissions (exhaust) from on-road vehicle activity by requiring the use of 2010 or newer diesel-powered heavy-duty trucks during construction of the project. However, since the potential emission reductions achieved would vary by the specific engine model year for each on-road heavy duty trucks, potential emissions reductions were not quantified. As such, Mitigation Measure AQ-2d would require the construction contractor to submit a Construction Emissions Control Plan, consisting of the proposed equipment inventory, proposed heavy-duty vehicle fleet, and calculation of the project's construction emissions for comparison to the SMAQMD's thresholds of significance. Mitigation Measure AQ-2e would require participation in the SMAQMD's off-site mitigation fee program and ensure that NO_X and PM_{10} emissions would be offset to a level that would not exceed the SMAQMD thresholds of significance for NO_X and PM_{10}. Therefore, with implementation of Mitigation Measures AQ-2a through AQ-2e, this impact for construction would be **less than significant with mitigation**.

OPERATION

Project operational activities would result in emissions of PM associated with daily routine and maintenance activities, such as panel washing. Therefore, implementation of best management practices during operational activities is required in order to support the use of the SMAQMD's non-zero thresholds of significance for operational PM emissions, as shown in Table AQ-7. Mitigation Measure AQ-2f would ensure compliance with the applicable operational best management practices to reduce PM emissions. With implementation of Mitigation Measure AQ-2f, this impact for operation would be **less than significant with mitigation**.

IMPACT AQ-3: EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS

As detailed in "Environmental Setting," under "Sensitive Receptors," the project site is generally surrounded by agricultural land uses. Sensitive land uses in the project area include single-family residences south of the project site, to the north of the project site along Meiss Road, and east of the project site along Dillard Road. The nearest sensitive receptor to the proposed project facilities is a residence on Meiss Road that is within 50 feet of the project site, approximately 1,000 feet west of Dillard Road.

TAC EMISSIONS – CONSTRUCTION AND DECOMMISSIONING

Construction and decommissioning of the proposed project would generate emissions of TACs from a variety of sources, including the use of off-road construction equipment and on-road vehicles. These activities may expose nearby receptors to TACs, including residents surrounding the project site. The greatest potential for TAC emissions during construction and decommissioning would be related to DPM emissions associated with operation of heavy-duty construction equipment. More than 90 percent of DPM is less than 1 micrometer in diameter, and thus is a subset of $PM_{2.5}$ (CARB 2021). Therefore, exhaust $PM_{2.5}$ is conservatively used as the upper limit for DPM emissions associated with construction of the proposed project.

The nearest sensitive receptor to the proposed project facilities is a residence on Meiss Road that is within 50 feet of the project site, approximately 1,000 feet west of Dillard Road, as well as additional residences at least 110 feet from the project site boundary. Health risk is a function of the concentration of contaminants in the environment and the duration of exposure to those contaminants. The risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period of time. Health effects from TACs are often described in terms of individual cancer risk, which is based on a 30-year lifetime exposure to TACs (OEHHA 2015). Construction and decommissioning activities would be temporary, lasting approximately eight months each to complete all phases. Therefore, construction and decommissioning would occur for a total of 16 months within a 30-year period, or 5 percent of the total exposure period used for typical health risk calculations [i.e., 30 years]) and would cease following completion of the construction and decommissioning activities. Further, emissions associated with construction and decommissioning activities would vary day to day and would also occur at varying distances from the nearest sensitive receptors, depending on the location of machinery and equipment within the project site. As detailed in Chapter 2, "Project Description", the project site is approximately 380 acres. Therefore, construction activities would span across the entire 380-acre project site, so emissions would be generated at distances of approximately 50 feet away from the nearest sensitive receptor to over 6,670 feet away. Therefore, emissions-generating activities within 1,000 feet of the same sensitive receptors would not occur for an extended period of time within the overall eight-month construction duration or eight-month decommissioning period. In addition, concentrations of mobile-source DPM emissions are typically reduced by approximately 60 percent at a distance of around 300 feet (100 meters) (Zhu et al 2002). Construction would vary in activity and equipment intensity over that time and would take place throughout the

approximately 380-acre project site, thereby limiting the amount of time that emitting equipment would be along the project site perimeters, closest to off-site residences.

Even during the most intensive construction periods, maximum daily emissions of exhaust $PM_{2.5}$ would be about 7 pounds per day, and this accounts for emissions from overlapping phases (i.e., construction of various components throughout the entire project site), not concentrated at a single location. As noted above, concentrations of mobile-source DPM emissions reduce substantially within several feet of the emissions source. Furthermore, the level of peak emissions (i.e., approximately 7 pounds per day of exhaust PM_{10}) accounts for peak construction activity that may occur intermittently but would not occur throughout the entire construction duration, and accounts for emissions generated by equipment and vehicles that would serve the entire project site and would not be concentrated proximate to a single sensitive receptor. As discussed above, under Impact AQ-2, Mitigation Measures AQ-2b and AQ-2c would require off-road diesel-powered equipment with engines greater than 50 horsepower to be rated Tier 4 Final and heavy-duty truck trips to be model year 2010 or newer. Thus, on- and off-site emissions of exhaust PM would be reduced, which would result in a proportional reduction in DPM emissions and exposure of nearby residences to DPM. Project construction and decommissioning would also be required to comply with all applicable SMAQMD rules and regulations and CARB Airborne Toxics Control Measures, including idling restrictions. Due to the intermittent and temporary nature of construction and decommissioning activities at any given location and the dispersive properties of TACs, temporary construction and decommissioning activities would not expose sensitive receptors to DPM emission levels that would result in a health hazard. As a result, this impact would be **less than significant**.

TAC Emissions - Operations

As described above in Impact AQ-2, operational activities would include routine maintenance and inspection activities. Daily emission estimates, assuming maintenance activities of up to 10 daily trips resulted in estimated operational emissions that would be less than one pound per day of PM_{10} and $PM_{2.5}$, as shown in Table AQ-7. The majority of these emissions would be generated by vehicle travel occurring off-site from light-duty vehicles trips by staff to and from the project site, and would generally not be proximate to the project site perimeter and nearby residences. Light duty vehicles are not substantial sources of TAC emissions (e.g., diesel PM), which are primarily associated with diesel-fueled vehicles. Therefore, operational emissions would not be considered a substantial source of TACs and this impact related to operational TAC emissions would be **less than significant**.

Criteria Air Pollutant Emissions and Health Effects of Project Emissions

Criteria pollutants can be classified as either regional or localized pollutants. Regional pollutants can be transported over long distances and affect ambient air quality far from the emissions source. Localized pollutants affect ambient air quality near the emissions source. Ozone is considered a regional criteria pollutant, whereas CO, NO_2, SO_2, and

lead are localized pollutants. PM can be both a local and a regional pollutant, depending on its composition.

As detailed in "Environmental Setting", exposure to criteria air pollutants can result in adverse health effects. The proposed project would primarily generate criteria air pollutant emissions during the construction phase, and the primary pollutants of concern would be ozone precursors (ROG and NO_X) and PM. Adverse health effects induced by regional criteria pollutant emissions generated by the proposed project (ozone precursors and PM) are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). For these reasons, ozone precursors (ROG and NO_X) contribute to the formation of ground-borne ozone on a regional scale, where emissions of ROG and NO_X generated in one area may not equate to a specific ozone concentration in that same area. Similarly, some types of particulate pollutant may be transported over long distances or formed through atmospheric reactions. As such, the magnitude and locations of specific health effects from exposure to increased ozone or regional PM concentrations are the product of emissions generated by numerous sources throughout a region, as opposed to a single individual project.

Existing models have limited sensitivity to small changes in regional criteria pollutant concentrations, and as such, translating project-generated regional criteria pollutants to specific health effects would not produce meaningful results. In other words, minor increases in regional air pollution from project-generated ROG and NO_X would have nominal or negligible impacts on human health. Currently, CARB and EPA have not approved a quantitative method to meaningfully and consistently translate the mass emissions of criteria air pollutants from a project to quantified health effects. As explained in the amicus brief filed by the South Coast Air Quality Management District (SCAQMD) in the *Sierra Club v. County of Fresno* (2014) 26 Cal.App.4th 704, it "takes a large amount of additional precursor emissions to cause a modeled increase in ambient ozone levels" (SCAQMD 2015).

In 2020, SMAQMD published Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District (SMAQMD 2020), which provides a screening level analysis estimating the health effects of criteria air pollutants and their precursors, as well as provides guidance for conducting a health effects analysis of a project that satisfies the requirements of the *Sierra Club v. County of Fresno*, 2018, 6 Cal. 5th 502 case ruling regarding the proposed Friant Ranch Project. The Guidance was prepared by conducting regional photochemical modeling and relies on the EPA's Benefits Mapping and Analysis Program to assess health impacts from ozone and $PM_{2.5}$. Analysis was conducted to estimate the level of health effects for a proposed project that has emissions at the maximum SMAQMD-recommended thresholds of significance using 41 hypothetical project locations, as well as a screening model conducted to estimate potential health effects for strategic areas where development is anticipated to cause exceedance of thresholds of significance. The results were used to develop two screening tools intended to support individual projects in analyzing health risks from criteria pollutants: the Minor Project Health screening Tool for projects with criteria pollutant emissions below SMAQMD's adopted thresholds of significance, and the Strategic Area Project Health

Screening Tool for projects with emissions between two and six times the SMAQMD threshold levels.

The modeling results support a conclusion that any one proposed project in the SFNA, which is inclusive of the proposed project site, with emissions at or below the maximum SMAQMD thresholds of significance levels for criteria air pollutants does not on its own lead to sizeable health effects. The findings of the SMAQMD screening modeling indicate that the mean health incidence for a project emitting at the threshold of significance levels at all 41 representative locations was less than 3 per year for mortality and less than 1.5 per year for other health outcomes evaluated. At the strategic area locations, as expected, mean health incidences are higher than the Minor Projects Health Effects Screening Tool. The maximum reported mortality rate is 22 incidences per year and all other health outcomes evaluated are under 9 per year from a project emitting 656 pounds/day of each NO_X, ROG, and $PM_{2.5}$ at the downtown Sacramento location.

As shown in Table AQ-4, construction-related emissions associated with the proposed project would exceed the SMAQMD thresholds of significance for NO_X and PM_{10}. NO_X emissions associated with project construction activities would be approximately 2.6 times the threshold, while PM_{10} emissions would be approximately 1.3 times the threshold. After implementation of Mitigation Measure Measures AQ-2a and AQ-2b, daily emissions during construction would be approximately 1.5 times the threshold for NO_X and 1.3 times the threshold for PM_{10}. For illustrative purposes for this impact discussion, the SMAQMD Strategic Area Project Health Screening Tool was used to evaluate the potential regional effect of the proposed project construction-related emissions on regional health. Proposed project operational emissions would be minimal and decommissioning emissions would also be lower than the estimated emissions for construction; therefore, the construction-related emissions demonstrate a worst-case scenario. The evaluation assumed the maximum daily emissions of ROG, NO_X, and $PM_{2.5}$. As described above, in accordance with the SMAQMD CEQA Guidance, the screening tool for emissions between 2 times and 8 times the maximum threshold of significance was applied. The screening tool estimates that a project at the strategic growth area location of Rancho Cordova (the nearest growth area location to the project site available within the Strategic Area Project Health Screening Tool), approximately 8.6 miles northwest of the proposed project site, emitting 52 pounds per day of ROG, 219 pounds per day of NO_X, and 21 pounds per day of $PM_{2.5}$. could result in an estimate of 4.4 premature deaths per year or a 0.0097-percent increase from background health incidences across the five-air-district region due to the increase in $PM_{2.5}$ from the proposed project, and 0.11 premature deaths per year or a 0.00036- percent increase from background health incidences across the five-air-district region due to an increase in ozone that could result from the proposed project's emissions of ozone precursors. These outcomes would be reduced with implementation of Mitigation Measures AQ-2a through AQ-2e, which would reduce the project's construction-related emissions of criteria air pollutants below the SMAQMD's thresholds of significance. Daily emissions of ROG, NOx, and $PM_{2.5}$ would be reduced to approximately 45, 130, and 18 pounds, respectively. As described previously, the modeling indicated that for projects with emissions at or below the maximum SMAQMD thresholds of significance levels for criteria air pollutants, the project on its own does not lead to significant health effects. In addition, the tool's outputs are based on the simulation

of a full year of exposure at the maximum daily exposure, which is not a realistic scenario because construction emissions would be limited to an eight-month construction duration and also vary on a daily basis as equipment and vehicle requirements would increase and decrease with each phase and specific construction activity.

As discussed above, the nature of criteria pollutants is such that the emissions from an individual project cannot be directly identified as responsible for health impacts within any specific geographic location. As a result, attributing health risks at any specific geographic location to a single proposed project is not feasible. Nonetheless, the results of the Strategic Area Project Health Screening Tool have been presented for informational purposes. The modeling results support a conclusion that the proposed project construction does not, on its own, lead to significant regional health effects from the emissions of criteria air pollutants and precursors. Therefore, this impact is **less than significant**.

IMPACT AQ-4: RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE

Sources that may emit odors during construction activities include exhaust from diesel construction equipment and heavy-duty trucks, which could be considered offensive to some individuals. Odors from these sources would be localized and generally confined to the immediate area surrounding the project site. The project would use typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Project operation would also not add any new sources of odors. The project would continue to utilize land for agricultural activities, which may consist of apiary facilities and/or grazing activities. As such, potential emissions, such as those leading to odors, from the agricultural activities, would remain similar to existing conditions. The land uses associated with the project are utility-related and would not include the typical odor-generating land uses, such composting facilities, wastewater treatment plants, or rendering plats. As a result, the project would not result in other emissions, such as those leading to odors, affecting a substantial number of people. This impact would be **less than significant**.

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6 BIOLOGICAL RESOURCES

INTRODUCTION

This chapter describes the regulatory and environmental setting for biological resources known or with potential to occur on the project site and identifies and analyzes impacts related to these resources resulting from implementation of the proposed project. In addition, this analysis addresses the potential for project implementation to conflict with the goals and objectives of the South Sacramento Habitat Conservation Plan (SSHCP), and in particular, the potential impact related to reduction of the inventory of mitigation lands. The description of biological resources information and analysis presented in this section is based on the project-specific Biological Technical Report prepared by Dudek (Appendix BR-1), from which data were verified by AECOM; in some cases, acreages were re-calculated as needed to support the independent analysis in this document.

ENVIRONMENTAL SETTING

The approximately 380-acre proposed project site (project site) is in eastern Sacramento County immediately south of the Cosumnes River corridor in the Sloughhouse area (refer to Plates PD-1 and PD-2 in Chapter 2, "Project Description"). The project site is located within the southeastern Sacramento Valley vernal pool region and is situated between the Mather core area (just over one mile to the northwest) and the Cosumnes/Rancho Seco core area (less than 0.5 mile to the southeast) (USFWS 2005).

An approximately 718-acre project study area (study area) was evaluated for all biological resources, including additional species-specific buffers as appropriate (see Appendix BR-1).[1] The study area is defined by the extent of the two project parcel boundaries within which the project site is located, minus areas occupied by existing solar facilities within the southern parcel (see Plate PD-2).

Most of the project site has been used for cattle grazing since at least the 1930s; portions of the site have also been used for irrigated pasture and cultivation of alfalfa hay for livestock feed in the past. In October 2021, at the time of the publication of the Notice of Preparation of this EIR for the proposed project, the project site was used year-round for cattle grazing. Other agricultural operations and an existing solar facility are located in adjacent areas (refer to Plates PD-3 and PD-6 in Chapter 2, "Project Description"). The project site and study area are surrounded by rural residential, commercial development, and open space generally composed of annual grassland and agricultural fields. Specifically, the Simpson Ranch development is to the south, a caviar aquaculture farm

[1] The "Study Area" defined in Appendix BR-1 is a total of 732 acres, which is based on the pre-2020 Sacramento County Assessor's Office effort to update and revise parcel delineation boundaries throughout the County. The "Study Area" described in this document is a total of approximately 718 acres and reflects current (2023) Sacramento County Assessor's Office parcel delineations.

is to the north, orchards and a turkey farm are to the east, and the Consumes River corridor is to the west/northwest.

Information regarding topography, surrounding land uses, and existing facilities on-site are provided under Environmental Setting in Chapter 2, “Project Description.”

Primary soils mapped within the project site include sandy loam in the northwestern, southern, and central portions and clay and silt loam in the north-central and northeastern portions. Three soil units mapped within the project site are considered hydric, and suitable to support wetlands. Additional discussion of the project site’s climate, soils, and hydrology are provided in Appendix BR-1 and in Chapter 9, Hydrology and Water Quality.

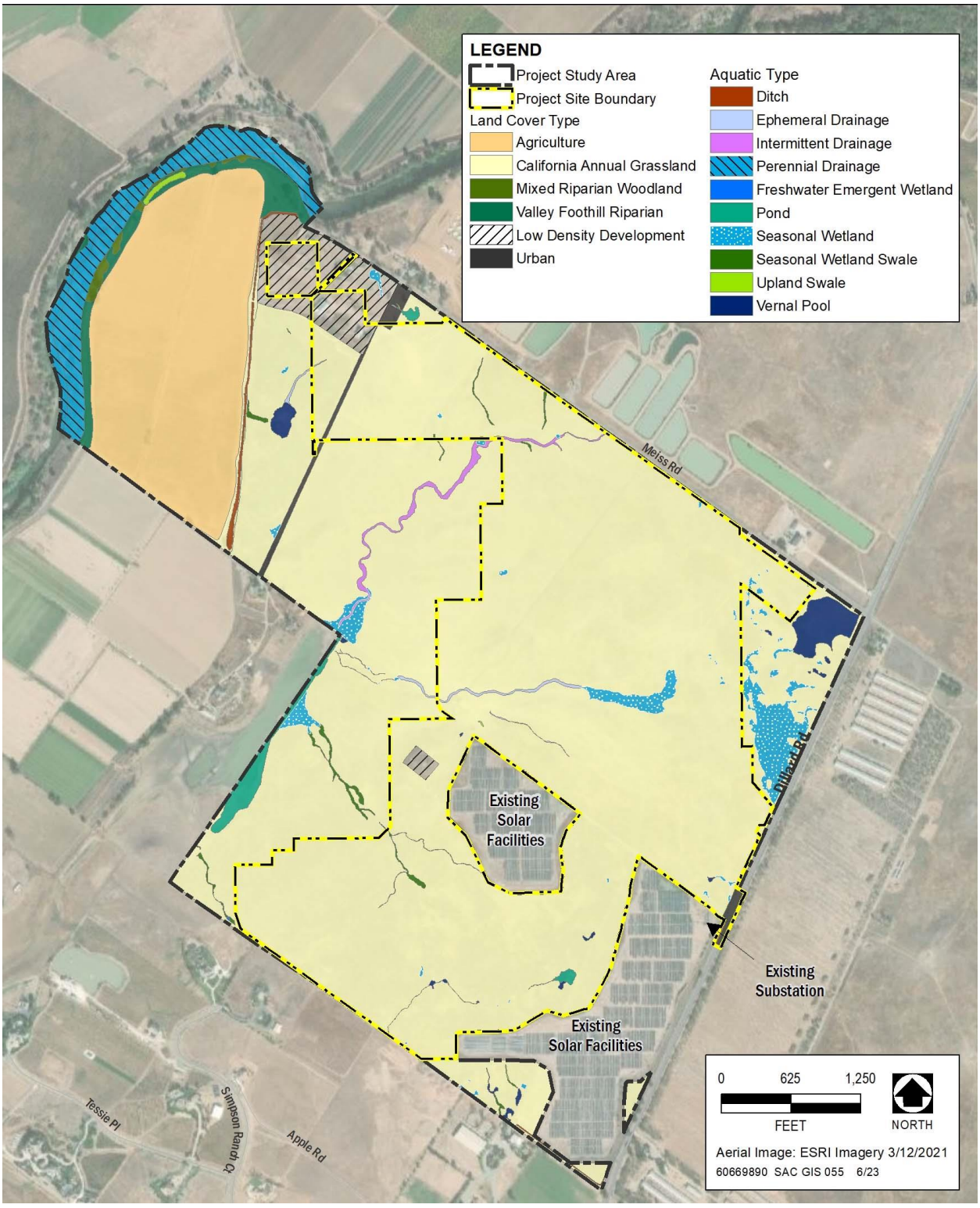
Vegetation and Land Cover

Vegetation communities and land cover types were mapped within the project study area using Fire and Resource Assessment Program (FRAP) vegetation community and land cover data (FRAP 2019), as modified by Dudek based on site conditions observed during field surveys and further modified by AECOM in 2023 to merge these data with the aquatic resources delineation. Aquatic cover types are based on an aquatic resources delineation completed by Dudek (see “Aquatic Features” below) (Appendix BR-2). *Table* BR-1 and Plate BR-1 identify vegetation and land cover types present within the project site and study area.

Aquatic Features

Dudek conducted an aquatic resources delineation within the project study area on October 27, 29, and 30, 2020; November 4 and 9 through 13, 2020; and March 3, 2021 (Appendix BR-2). Delineation surveys followed the methodology described in United States Army Corps of Engineers’ (USACE’s) Wetlands Delineation Manual (USACE 1987) and the Regional Supplement for the Arid West Region (USACE 2008a). Non-wetland waters of the United States (U.S.) and/or State were delineated based on the presence of an ordinary high water mark (OHWM), as determined using the methodology in the OHWM Field Guide for the Arid West Region (USACE 2008b). Additional detail on delineation methods, survey conditions, and field datasheets are provided in Appendix BR-2. Table BR-1 and Plate BR-1 identify all aquatic resources delineated within the project site and study area. Potential State and federal jurisdictional wetlands and other waters present in the project site are further identified under “Waters of the U.S. and Waters of the State,” below.

Plate BR-1: Vegetation and Land Cover Types within the Project Site and Study Area



Sources: Appendix BR-1, adapted by AECOM in 2023.

Table BR-1: Vegetation and Land Cover Types in the Sloughhouse Solar Project Site and Study Area

Vegetation Community/Land Cover Type	Vegetation/Cover Type Description	Project Site (Acres)	Adjacent Lands within Project Study Area (Acres)	Project Study Area (Total Acres)
Non-Aquatic Cover Types				
Annual Grassland[1]	Characterized by annual, nonnative grasses and forbs; lacks a shrub and tree layer. Dominant species include soft brome (*Bromus hordeaceus*), Medusa head (*Elymus caput-medusae*), and narrow tarweed (*Holocarpha virgata*). Cattle grazing apparent throughout; however, areas north of the central access road appeared overgrown, weedy, and ungrazed during the January 2022 site visit. Numerous aquatic resource features are present throughout this cover type.	361.49	179.68	541.17
Low Density Development	Primarily located in the northeastern portion of the study area and project site, adjacent to agricultural lands. Consist of relatively sparsely constructed environments, including residences and associated structures, farm buildings, and small rural neighborhoods with large lot sizes.	11.28	10.58	21.86
Urban	County roadways	1.76	2.41	4.17
Agricultural	Present east of the Cosumnes River riparian corridor and outside the project site. Land use dominated by farming and other agricultural production, including hay and alfalfa pastures, row crops and other croplands. Production practices include flood-irrigation and cultivation followed by harvesting and discing. After discing, some fields appear to remain fallow for short periods of time, allowing for establishment of annual and biennial native and non-native annual grasses and broad-leaved plants, including many non-native species.	0	85.45	85.45
Mixed Riparian Woodland	Present along the Cosumnes River corridor. Intergrades with Annual Grassland along streams and agricultural fields. Vegetation includes various oak species (*Quercus* spp.), elderberry (*Sambucus* spp.), and sparse to dense ground cover.	0	1.60	1.60
Valley Foothill Riparian	Present along the Cosumnes River corridor. Similar to Mixed Riparian Woodland.	0	8.81	8.81

Vegetation Community/Land Cover Type	Vegetation/Cover Type Description	Project Site (Acres)	Adjacent Lands within Project Study Area (Acres)	Project Study Area (Total Acres)
Aquatic Cover Types				
Ephemeral Drainage	Consist of stream channels that are naturally occurring rather than human created and contain flowing water during and briefly after precipitation events. Hydrology depends on inputs during rain events and runoff from the surrounding uplands. There are no continuous riparian corridors associated with these features.	0.73	0.38	1.11
Intermittent Drainage	Generally, with flowing water during certain times of the year, when groundwater provides water for stream flow, and receive supplemental water from rainfall runoff. The intermittent drainage on site appears to receive water via a culvert from a basin complex located north of the study area. This drainage receives water from two adjacent seasonal wetland swales, contains three seasonal wetlands within low points or widenings, and terminates into a pond.	0.46	1.90	2.36
Seasonal Wetland Swale	Consist of topographic depressions that would be expected to convey water when inundated, but where a defined bed and bank and typical fluvial indicators are lacking.	0.70	1.40	2.10
Upland Swale	Consist of linear topographic depressions that lack a distinct ordinary high water mark.	0.08	0.54	0.62
Pond	Natural closed depressions that have been artificially augmented by perennial water sources, generally for the purpose of supporting livestock.	0.37	3.90	4.27
Seasonal Wetland	Appear to be inundated seasonally; some are connected via seasonal wetland swales, ephemeral drainages, and/or intermittent drainages. Characterized by a distinct change in vegetation type and cover from the surrounding grassland. Small mammal burrows were observed within several of the features, indicating that these features remained dry for a long enough period for subterranean animals to inhabit them.	3.16	10.99	14.15

Vegetation Community/Land Cover Type	Vegetation/Cover Type Description	Project Site (Acres)	Adjacent Lands within Project Study Area (Acres)	Project Study Area (Total Acres)
Vernal Pool	Characterized as three-parameter wetlands with an impermeable layer such as a hard pan that may fill and empty several times during the rainy season. These features may be isolated or connected to larger vernal complexes via swales or subsurface flows. The vernal pools on site exhibited concentric rings of distinctly different vegetation cover and species composition.	0.25	6.04	6.29
Ditch	These are earthen ditches; human-made features with intermittent hydrology intended for runoff from stormwater, agricultural uses, irrigation, or similar purposes. There are no continuous riparian corridors associated with these features.	0.15	1.78	1.93
Perennial Drainage (Cosumnes River)	Includes the Cosumnes River and its associated riparian corridor, a known jurisdictional water with perennial flows that originates in the Sierra Nevada mountains and flows approximately 50 miles into the Central Valley, emptying into the Mokelumne River in the Sacramento San Joaquin Delta.	0.0	21.75	21.75
Freshwater Emergent Wetland	This feature has developed because of artificial irrigation and would likely convert to upland vegetation if the leakage was repaired.	0.0	0.02	0.02
Total		**380.4**	**337.2**	**717.7[2]**

Source: Appendix BR-1, adapted by AECOM in 2023.

Notes:

[1] Includes areas of Valley grassland and California annual grassland (Appendix BR-1).

[2] The “Study Area” defined in Appendix BR-1 is a total of 732 acres, which is based on the pre-2020 Sacramento County Assessor’s Office effort to update and revise parcel delineation boundaries throughout the County. The “Study Area” described in this document is a total of approximately 718 acres and reflects current (2023) Sacramento County Assessor’s Office parcel delineations.

Native and Non-Native Trees

International Society of Arboriculture Certified Arborists with California Tree and Landscaping Consulting Inc. conducted a tree inventory in February and December 2020 (Appendix BR-3), to identify all trees within the study area, their diameter, canopy radius, critical root zone, and condition rating. Trees protected by the Sacramento County General Plan Policy CO-138 were also identified. A report detailing the tree inventory methods, data collection, results, and recommended actions is provided in Appendix BR-3. Table BR-2 summarizes the tree inventory for the project site.

Table BR-2: Summary of Tree Inventory within the Sloughhouse Solar Project Site

Tree Species	Number of Trees Inventoried	Number of Protected Trees[1]
Oak species (*Quercus* sp.)[2]	1	0
Incense cedar (*Calocedrus decurrens*)	1	0
Tree of heaven (*Ailanthus altissima*)	12	0
Unknown species[2]	1	0
Total	**15**	**0**

Source: Appendix BR-3, adapted by AECOM in 2022.
Notes:
[1] Protected under Sacramento County General Plan
[2] Dead tree

Only one tree that is protected by Sacramento County General Plan Policy CO-138 was identified during the tree inventory, a Valley oak, which is located approximately 200 feet north of the project site, but within the greater study area.

Special-Status Species

Special-status species considered in this EIR include plants and animals in the following categories:

- species officially listed, proposed for listing by the State of California or the federal government as endangered, threatened, or rare;
- candidates for State or federal listing as endangered or threatened;
- species identified by the California Department of Fish and Wildlife (CDFW) as Species of Special Concern;
- species listed as Fully Protected under the California Fish and Game Code (CFGC);
- species afforded protection under local or regional planning documents, such as Covered Species under the SSHCP;
- taxa considered by CDFW to be “rare, threatened, or endangered in California” and assigned a California Rare Plant Rank (CRPR). The CDFW system includes

six rarity and endangerment ranks for categorizing plant species of concern, which are summarized as follows:

- CRPR 1A - Plants presumed to be extinct in California;
- CRPR 1B - Plants that are rare, threatened, or endangered in California and elsewhere;
- CRPR 2A - Plants presumed to be extinct in California, but more common elsewhere;
- CRPR 2B - Plants that are rare, threatened, or endangered in California, but more common elsewhere;
- CRPR 3 - Plants about which more information is needed (a review list); and
- CRPR 4 - Plants of limited distribution (a watch list).

- taxa (i.e., taxonomic categories or groups) that meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act (CEQA) Guidelines.

All plants with a CRPR rank are considered “special plants” by CDFW. The term “special plants” is a broad term used by CDFW to refer to all the plant taxa inventoried in CDFW’s California Natural Diversity Database (CNDDB), regardless of their legal or protection status. Plants ranked as CRPR 1A, 1B, 2A, and 2B may qualify as endangered, rare, or threatened species within the definition of CEQA Guidelines Section 15380. CDFW recommends that potential impacts to CRPR 1 and 2 species be evaluated in CEQA documents. In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to CEQA Guidelines Section 15380. However, these species may be evaluated by the lead agency on a case-by-case basis. Because of the association of several CRPR Rank 3 and 4 species with sensitive aquatic habitats that are present in the project site, CRPR Rank 3 and 4 species were considered “special-status” in this EIR analysis.

A list of special-status species that could potentially occur in the project site, provided suitable habitat conditions are present, was developed through review of previous studies conducted in the vicinity of the project site; current CNDDB and California Native Plant Survey (CNPS) Rare Plant Inventory searches (CDFW 2022; CNPS 2022); an official list obtained from the U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (USFWS 2022a); and the SSHCP (County of Sacramento et al. 2018). The CNDDB search included all recorded occurrences within a 5-mile buffer of the project study area. The CNPS Inventory search included the Sloughhouse 7.5-minute United States Geographic Survey (USGS) quadrangle within which the project site occurs, plus the eight adjacent surrounding quadrangles.

The project site is in the northeast portion of the SSHCP Plan Area, which contains documented occurrences for many SSHCP Covered Species, including legenere (*Legenere limosa*), vernal pool fairy shrimp (*Brachinecta lynchi*), western spadefoot (*Spea hammondii*), western pond turtle (*Emys marmorata*) and all the bird Covered Species,

except greater sandhill crane (County of Sacramento, et al. 2018). The portion of the HCP Plan Area where the project site is located also encompasses most of the SSHCP Plan Area's documented occurrences for valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), clustered in a reach of the Cosumnes River extending approximately two miles west of its crossing with Jackson Road (County of Sacramento, et al. 2018), approximately five miles upstream from the project site.

To assist in identifying special-status species that are present or could occur in the project site or vicinity, focused protocol-level rare plant and special-status wildlife surveys were conducted for the project. A detailed description of survey methods and results are provided in Appendix BR-1. Rare plant reference populations were visited in the vicinity of the project site on April 22, 2021, March 14, 2022, March 30, 2022, and April 11, 2023 and rare plant surveys, in accordance with current USFWS (2000), CDFW (2018) and CNPS guidelines (2001), were conducted on May 4, 2021, April 25 and June 9, 2022, and May 22, 2023. An additional rare plant survey is currently planned for summer 2023. Protocol-level and focused surveys were completed for the following special-status wildlife species:

- valley elderberry longhorn beetle,
- California tiger salamander (habitat assessment and larval survey),
- large listed branchiopods (dry season and wet season surveys),
- western spadefoot (habitat assessment and larval surveys),
- burrowing owl (breeding season survey),
- Swainson's hawk (including continued surveys within the project site and vicinity in 2023),
- tricolored blackbird, and
- Crotch's bumble bee (habitat mapping)

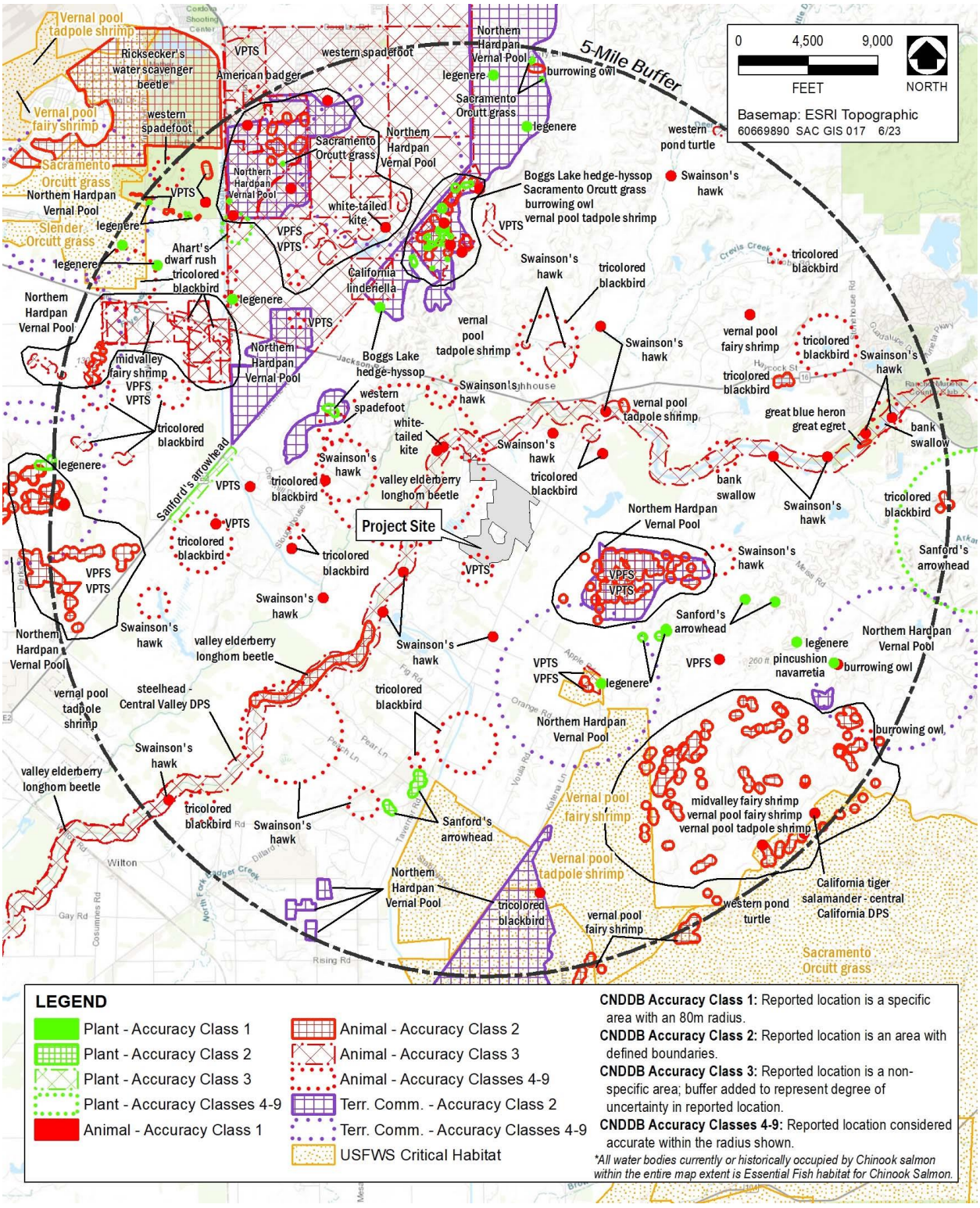
Plate BR-2 shows all CNDDB-recorded occurrences, essential fish habitat (EFH), and designated critical habitat within five miles of the project site.

Table BR-3 and Table BR-4 identify special-status plants and wildlife with potential to occur within the project site. See Appendix BR-4 for species considered but eliminated from further analysis.

SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities are listed in the CDFW CNDDB and in the Natural Communities List as having a rarity rank of S1 through S3 (CDFW 2021) due to the rarity of the community in the state or throughout its entire range (i.e., globally); they also include those specifically evaluated under CEQA, Section 1602 of the CFGC, Section 404 of the Clean Water Act (CWA), or the State's Porter-Cologne Water Quality Control Act.

Plate BR-2: CNDDB-Recorded Occurrences, Essential Fish Habitat, and Designated Critical Habitat within 5 Miles of the Project Site



Sources: CDFW 2022; NOAA 2022; USFWS 2022b.

Table BR-3: Special Status Plant Species Potential for Occurrence within the Proposed Sloughhouse Solar Project Site

Species Scientific Name	Species Common Name	Listing Status	Habitat Requirements	Potential for Occurrence
Brodiaea rosea ssp. *vallicola*	valley brodiaea	CRPR 4.2	Gravelly, sandy, or silty soils in valley and foothill grassland and vernal pools on alluvial terrace geomorphology. Elevation range: 35 to 1,100 feet. Blooms period: April-May, sometimes June.	Moderate. The project site is within the known range of the species. Suitable habitat for this species is present in annual grasslands, floodplains, terraces, and vernal pools where silt, sandy or loam soils are present. The nearest recorded occurrence for this species is approximately four miles to the northwest.
Downingia pusilla	dwarf downingia	CRPR 2B.2; SSHCP	Vernal pools and mesic sites in valley and foothill grasslands. Elevation range: 3–1,459 feet. Bloom period: March–May.	Moderate. The project site is within the known range of the species, and SSHCP modeled habitat is present. Suitable habitat for this species is located in the vernal pools, wetlands, swales and seasonal wetlands. The nearest known occurrences for this species are located to the west in the 'Elk Grove' USGS 7.5-Minute Quad, and south to southwest in the 'Clay' and 'Galt' USGS 7.5-Minute Quads.
Eryngium pinnatisectum	Tuolumne button-celery	CRPR 1B.2	Mesic sites and vernal pools in cismontane woodland and lower montane coniferous forest. California endemic known from the eastern Central Valley and adjacent Sierra Nevada foothills. Elevation range: 230–3,000 feet Bloom period: May–August	Low. This species has not been documented within five miles of the project site, but the project site is within the known range of the species. Suitable habitat for this species is minimal and of low quality and located in the vernal pools, wetlands swales, and seasonal wetlands. The nearest known occurrences for this species are located to the east and northeast in the 'Carbondale' and 'Folsom SE' USGS 7.5-Minute Quads.
Fritillaria agrestis	stinkbells	CRPR 4.2	Clay soils, and sometimes serpentinite, in chaparral, cismontane woodland, pinyon/juniper woodland, and valley and foothill grassland. Elevation range: 35–5,100 feet Bloom period: March–June	Moderate. The project site is within the known range of the species, and suitable habitat for the species is present. The nearest known occurrence for this species is approximately one mile to the northwest.

Species Scientific Name	Species Common Name	Listing Status	Habitat Requirements	Potential for Occurrence
Gratiola heterosepala	Boggs Lake hedge-hyssop	SE; CRPR 1B.2; SSHCP	Clay soils in marshes, swamps, lake margins, and vernal pools. Elevation range: 33–7,792 feet. Bloom period: April–August.	Moderate. The project site is within the known range of the species and SSCHP modeled habitat is present. Suitable habitat for this species is located in the vernal pools, wetlands swales, and seasonal wetlands. The nearest known occurrence for this species is within five miles, approximately 0.85 miles southwest of the junction at Sloughhouse Road and Jackson Road (Highway 16).
Hesperavax caulescens	hogwallow starfish	CRPR 4.2	Shallow vernal pools and mesic clay in valley and foothill grasslands Elevation range: 0–1,655 feet Bloom period: March–June.	Moderate. The project site is within the known range of the species, and suitable habitat is present. The nearest recorded occurrence for this species is approximately 2.5 miles to the north-northeast.
Juncus leiospermus var. *ahartii*	Ahart's dwarf rush	CRPR 1B.2; SSHCP	Mesic sites in valley and foothill grasslands; shallow vernal pools and the margins of large vernal pools and swales, often associated with recent gopher mounds. Elevation range: 100–750 feet Bloom period: March–May	Low. This species has not been documented within five miles of the project site, but the project site is within the known range of the species and SSHCP modeled habitat is present. Habitat for the species is minimal and of low quality, located in the vernal pools, wetland swales and seasonal wetlands. The nearest known occurrence for this species is at the southeast corner of Kiefer Boulevard and Sunrise Boulevard.
Legenere limosa	legenere	CRPR 1B.1; SSHCP	Vernal pools, vernal swales, and ephemeral ditches; also the seasonally fluctuating margins of more permanent water bodies, including stock ponds. Elevation range: 3–2,887 feet Bloom period: April–June	Moderate. The project site is within the known range of the species and SSHCP modeled habitat is present. Suitable habitat for this species is located in the vernal pools, wetland swales, and seasonal wetlands. The nearest known occurrences for this species approximately two miles northeast of the Nimbus Fish Hatchery and 1.8 miles east of the junction of Apple Road and Dillard Road.

Species Scientific Name	Species Common Name	Listing Status	Habitat Requirements	Potential for Occurrence
Navarretia eriocephala	hoary navarretia	CRPR 4.3	Vernally mesic sites in cismontane woodland and valley and foothill grassland. Elevation range: 345–1,310 feet Bloom period: May–June	Moderate. The project site is within the known range of the species. Minimal suitable habitat for the species is present in the vernal pools, wetland swales and seasonal wetlands. The nearest known occurrence for this species is located to the west in the 'Elk Grove' USGS 7.5-Minute Quad.
Navarretia myersii ssp. *myersii*	pincushion navarretia	CRPR 1B.1; SSHCP	Vernal pools, often on acidic soils. California endemic restricted to six known locations, two in Sacramento County. Elevation range: 65–1,085 feet Bloom period: April–May	Moderate. The project site is within the known range of the species and SSHCP modeled habitat is present. Specifically, the Hadselville-Pentz and Redding Gravelly Loam soil complexes are slightly acidic, therefore vernal pools located in these soils provide potential suitable habitat. The nearest known occurrence for this species is approximately six miles east of Highway 16, south of the Schneider Ranch property near Meiss Road.
Orcuttia tenuis	slender Orcutt grass	FT; SE; CRPR 1B.1; SSHCP	Vernal pools, in often gravelly soil. California endemic known from less than 100 occurrences, primarily in Shasta and Tehama Counties. Elevation range: 115–5,774 feet Bloom period: May–September (sometimes October)	Moderate. The project site is within the known range of the species and SSHCP modeled habitat is present. Suitable habitat for this species is located in the vernal pools, wetlands swales, and seasonal wetlands. Designated Critical Habitat (DCH) is located approximately four miles northwest of the project site. A known occurrence is also recorded for this species in the 'Elk Grove' USGS 7.5-Minute Quad to the west.
Orcuttia viscida	Sacramento Orcutt grass	FE; SE; CRPR 1B.1; SSHCP	Vernal pools. California endemic known from fewer than 10 occurrences. Elevation range: 98–328 feet Bloom period: April–July (sometimes September)	Moderate. The project site is within the known range of the species and SSHCP modeled habitat is present. Suitable habitat for this species is present in the vernal pools, wetlands swales and seasonal wetlands. DCH is located approximately four miles northwest of the project site. There are also several known occurrences for this species within five miles, including numerous locations off Kiefer Boulevard near the intersection with Grant Line Road.

Species Scientific Name	Species Common Name	Listing Status	Habitat Requirements	Potential for Occurrence
Sagittaria sanfordii	Sanford's arrowhead	CRPR 1B.2; SSHCP	Standing or slow-moving freshwater ponds, marshes, swamps, and ditches; shallow freshwater, typically with emergent wetland species. Elevation range: 0–2,133 feet Bloom period: May–October (sometimes November)	Low. The project site is within the known range of the species, and SSHCP modeled habitat for the species is present. Suitable habitat for this species in the project site is limited and low-quality habitat (i.e., perennially inundated habitat). The nearest known occurrence for this species is approximately 0.6 miles south of Meiss Road and southeast of Sloughhouse.

Sources: Appendix BR-1; Calflora 2022; CDFW 2022; CNPS 2022; Jepson eFlora 2021; County of Sacramento, et al. 2018; USDA 2021; USFWS 2022a.

NOTES:

DCH = Designated Critical Habitat

FE = Federally listed as endangered under ESA

FT = Federally listed as threatened under ESA

SE = State of California listed as endangered under CESA

CRPR = California Rare Plant Rank

CRPR Categories:

1B: Plants rare, threatened, or endangered in California and elsewhere

2B: Plants rare, threatened, or endangered in California but more common elsewhere

3: Plants about which more information is needed (a review list)

4: Plants with limited distribution (a watch list)

Threat Ranks:

0.1: Seriously threatened in California (>80% of occurrences are threatened and/or high degree and immediacy of threat)

0.2: Fairly endangered in California (20 to 80% of occurrences are threatened)

0.3: Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

USGS = U.S. Geological Survey

SSHCP = South Sacramento Habitat Conservation Plan; under "Listing Status" refers to Covered Species under the SSHCP

Potential for Occurrence Definitions:

Moderate: The species has not been documented in the vicinity, but the project site is within the known range of the species, and habitat for the species is present.

Low: The species has not been documented in the vicinity and the project site is within the known range of the species, but habitat for the species is of low quality.

Table BR-4: Special Status Wildlife Species Potential for Occurrence within the Proposed Sloughhouse Solar Project Site

Species Scientific Name	Species Common Name	Listing Status	Habitat Requirements	Potential for Occurrence
Invertebrates				
Bombus crotchii	Crotch's bumblebee	SCE	Inhabits open grassland and scrub habitats primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California. Nests primarily underground (e.g., abandoned rodent burrows) or other cavities in the ground surface. Forages on a variety of floral resources with open flowers and short petals (e.g., Asclepias, Chaenactis, Lupinus, Medicago, Phacelia, and Salvia) from late February through late October (queens) and from late March through September (workers/males). Like other bumble bees, likely overwinters in soft disturbed soil (e.g., mole hills), in small cavities on or just below ground surface, or under leaf litter or other debris.	Low. This species has not been documented within the project site during surveys of suitable habitat during spring 2023. No known occurrences have been documented within five miles of the project site.
Branchinecta lynchi	vernal pool fairy shrimp	FT; SSHCP	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, where it is found in astatic rain-filled pools (vernal pools). Typically inhabits small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Low. This species has not been documented on the project site; however, several known occurrences are within five miles. The nearest is located within 0.25 miles on the south side of Meiss Road, approximately 0.75 miles southeast of the Dillard Road intersection. Suitable habitat and SSHCP modeled habitat are present in on-site vernal pools. There is DCH for this species within five miles, with the nearest approximately 1.3 miles to the southeast. Despite suitable habitat for this species within the project site, protocol-level wet and dry season large listed branchiopod surveys

Species Scientific Name	Species Common Name	Listing Status	Habitat Requirements	Potential for Occurrence
				conducted in 2020 through 2021 yielded no detections of this species; therefore, potential for occurrence on-site is low.
Branchinecta mesovallensis	midvalley fairy shrimp	SSHCP	Vernal pools in the grasslands of the Central Valley.	Low. This species has not been documented on the project site; however, several occurrences are within five miles; the nearest record is located northwest of the junction at Florin Road and Sunrise Boulevard on the north and south sides of Highway 16. SSHCP modeled habitat is present; suitable habitat is located in on-site vernal pools. Despite suitable habitat for this species within the project site, protocol-level wet and dry season large listed branchiopod surveys conducted in 2020 through 2021 yielded no detections of this species; therefore, potential for occurrence on-site is low.
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT; SSHCP	Occurs in the Central Valley in association with its host plant, the blue elderberry (*Sambucus mexicana*), which generally grows along riparian corridors and nearby upland habitats.	Known to occur. Suitable habitat (i.e., elderberry [*Sambucus* sp.] shrubs) is present in the project site; potential evidence of species presence (i.e., bore holes) was observed on one of three elderberry within the project site during focused surveys for this species by Dudek in 2021. In addition, known historic occurrences overlap the western part of the project site.
Hydrochara rickseckeri	Ricksecker's water scavenger beetle	SSHCP	Aquatic; lives in weedy, shallow, open water associated with freshwater seeps, springs, ponds, vernal pools and slow-moving streams.	Moderate. The project site is within the known range of the species, and known occurrences are located within five miles, at Mather Field Regional Park. SSHCP modeled habitat is present and several potential vernal pools are located within the project site and vicinity.
Lepidurus packardi	vernal pool tadpole shrimp	FE; SSHCP	Inhabits a variety of ephemeral aquatic habitat, including vernal pools and swales, in the Sacramento Valley. Typically occurs in pools in grass-bottomed swales of unplowed grasslands, although can also be	Known to occur. This species has been documented on the project site (CNDDB 2022), and SSHCP modeled habitat is present. Suitable habitat includes most seasonally wet aquatic features, including vernal pools,

Species Scientific Name	Species Common Name	Listing Status	Habitat Requirements	Potential for Occurrence
			found in pools that are mud-bottomed and highly turbid.	seasonal wetlands and swales, ephemeral drainages, and ditches (County of Sacramento et al. 2018). DCH areas for this species are located within five miles, the nearest is approximately 1.3 miles to the southeast. Protocol-level wet and dry season surveys for large listed branchiopod conducted in 2020 through 2021 yielded no detections.
Amphibians and Reptiles				
Ambystoma californiense pop. 1	California tiger salamander – central California DPS	FT; ST; SSHCP	Requires underground refuges; lives in vacant or mammal-occupied burrows throughout most of the year. Breeds and lays eggs primarily in vernal pools and other temporary rainwater ponds following relatively warm rains in November to February, and sometimes uses permanent human-made ponds if predatory fishes are absent; streams are rarely used for reproduction. Typically occurs in annual grassland habitat, but also occurs in the grassy understory of valley-foothill hardwood habitats, and uncommonly along stream courses in valley-foothill riparian habitats.	Low. This species has not been documented in the project site. Known occurrences are within five miles, southeast of Laguna Creek (i.e., approximately 0.25 miles southeast of Katena Lane at Clay Station Road). Low quality habitat and SSHCP modeled aquatic and upland habitat is present in the project site. Few low quality breeding ponds are present within two kilometers from the project site. No CTS were identified during aquatic larval surveys conducted by Dudek within the study area in 2021.
Spea hammondii	western spadefoot	SSC; SSHCP	Open areas with sandy/gravelly soils. Most of the year is spent in underground burrows up to 36 inches deep, which they construct themselves. Some individuals also use mammal burrows. Variable habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Vernal pools that do not contain bullfrogs, fish, or crayfish are essential for	Moderate. This species has not been documented in the project site and was not detected during focused surveys conducted by Dudek in 2021 within potentially suitable habitat in the project area. However, three known occurrences are within five miles; the closest is on the west side of Sloughhouse Road, approximately 0.9 miles south of Highway 16. Suitable habitat and SSHCP modeled aquatic and upland habitat are present in the project site.

Species Scientific Name	Species Common Name	Listing Status	Habitat Requirements	Potential for Occurrence
			breeding and egg-laying. Recently metamorphosed juveniles seek refuge in the immediate vicinities of breeding ponds for up to several days after transformation, where they hide in drying mud cracks, under boards and other surface objects.	
Emys marmorata	northwestern pond turtle	SSC; SSHCP	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater.	Moderate. This species has not been documented in the project site and was not detected during focused surveys conducted by Dudek in 2021 in potential aquatic habitat within the project study area. However, two known occurrences are approximately five miles from the project site, located at Laguna Creek and Deer Creek. Suitable habitat and SSHCP modeled aquatic and upland habitat are present.
Birds				
Agelaius tricolor	tricolored blackbird	ST; SSC; SSHCP	Nests in wetlands or in dense vegetation near open water. Dominant nesting substrates: cattails, bulrushes, blackberry, agricultural silage. Nesting substrate must either be flooded, spinous, or in some way defended against predators (Hamilton 2004).	Known to occur. This species was documented in the northernmost portion of the project site during focused project surveys conducted by Dudek in 2021. No nesting activity was observed during these surveys. Several additional occurrences of this species have been recorded within five miles; the nearest is approximately 0.40 miles south of Dillard Road and the intersection of Highway 16. SSHCP modeled nesting and foraging habitat is mapped within the project site. Field surveys indicated that nesting habitat is generally absent, but quality foraging habitat is present in the project site.
Ammodramus savannarum	grasshopper sparrow	SSC	In the foothills and lowlands west of the Cascades/Sierras. Dry, dense grasslands, especially those with a variety of grasses and tall forbs and scattered shrubs for singing perches.	Moderate. While no CNDDB-recorded occurrences are within five miles, suitable habitat is located throughout the project site.

Species Scientific Name	Species Common Name	Listing Status	Habitat Requirements	Potential for Occurrence
Athene cunicularia (burrow sites and some wintering sites)	[western] burrowing owl	SSC; SSHCP	Open, flat expanses with short, sparse vegetation and few shrubs, level to gentle topography and well drained soils. Requires underground burrows or cavities for nesting and roosting. Can use rock cavities, debris piles, pipes, and culverts if burrows unavailable. Habitats include grassland, shrub steppe, desert, agricultural land, vacant lots, and pastures.	Known to occur. Burrowing owls and active owl burrows were observed on the project site during protocol-level surveys conducted by Dudek during the breeding season in 2021. Several additional occurrences for this species are recorded within five miles. SSHCP modeled nesting and nesting-wintering habitat is mapped within the project site.
Buteo regalis	ferruginous hawk	SSHCP	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats, in winter.	Moderate. No CNDDB-recorded occurrences within five miles, but suitable winter foraging habitat is present in the project site. SSHCP modeled foraging habitat is present in the project site.
Buteo swainsoni (nesting)	Swainson's hawk	ST; SSHCP	Nests in stands with few trees in riparian areas, juniper-sage flats, and oak savannah in the Central Valley. Forages in adjacent grasslands, agricultural fields, and pastures.	Known to occur. This species was observed foraging and courting within the project site during protocol-level surveys conducted by Dudek in 2021 and 2022; one potential nest was observed in 2022 outside the project site and study area, within 0.5 mile. Numerous additional records for this species have been documented within five miles from the project site. Suitable nesting habitat and nest records occur along the Cosumnes River corridor outside the project site; suitable foraging habitat is present throughout the project site.
Circus cyaneus	northern harrier	SSC; SSHCP	Nests on the ground in patches of dense, tall vegetation in undisturbed areas. Breeds and forages in variety of open habitats such as: marshes; wet meadows; weedy borders of lakes, rivers and streams; grasslands; pastures; croplands; sagebrush flats; and desert sinks.	Known to occur. This species was observed during project surveys conducted by Dudek in 2021. Within the project site, suitable habitat is present in freshwater emergent wetlands, grasslands and fallow fields, and other open habitats.

Species Scientific Name	Species Common Name	Listing Status	Habitat Requirements	Potential for Occurrence
Elanus leucurus (nesting)	white-tailed kite	FP; SSHCP	Typically nest in the upper third of trees that may be 10–160 feet (33– 525 m) tall. These can be open-country trees growing in isolation, or at the edge of or within a forest.	Known to occur. This species was observed during reconnaissance-level surveys conducted by Dudek in 2021; no nesting activity was observed. Additional occurrences, including a nest site along the Cosumnes River, have been recorded within five miles from the project site. SSHCP modeled nesting habitat is mapped along the Cosumnes River north of the project site. SSHCP modeled foraging habitat overlaps the project site.
Haliaeetus leucocephalus (nesting and wintering)	bald eagle	FDL; SE; FP	Nests in large, old- growth, or dominant live tree with open branch work, especially ponderosa pine (*Pinus ponderosa*). Requires large bodies of water or rivers with abundant fish, and adjacent snags.	Known to occur. This species was observed during the reconnaissance-level surveys conducted by Dudek in 2021; observations were likely of winter migrants, and of individuals foraging along the Cosumnes River. Nesting habitat for the species is either absent or of low quality within the project site and no CNDDB-recorded occurrences are within 10 miles. However, the Cosumnes River provides (winter) foraging habitat for this.
Lanius ludovicianus	loggerhead shrike	SSC; SSHCP	Breeds in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground.	Moderate. No CNDDB-recorded occurrences within five miles, but suitable habitat is present in the project site. SSHCP modeled nesting and foraging habitat is present in the project site.
Riparia (nesting)	bank swallow	ST	Riparian areas with sandy, vertical bluffs or riverbanks. Also nests in earthen banks and bluffs, as well as sand and gravel pits. Breeding range primarily limited to Sacramento and Feather rivers in the Central Valley. Feeds over grassland, brushland, wetlands, and cropland during migration.	Moderate. The project site provides suitable migratory habitat for this species. Historic (1980s) occurrences of this species are recorded along the Cosumnes River, approximately three to five miles upstream from the project site.

Species Scientific Name	Species Common Name	Listing Status	Habitat Requirements	Potential for Occurrence
Mammals				
Lasiurus blossevillii	western red bat	SSC; SSHCP	Roosting habitat includes forests and woodlands, often in edge habitats adjacent to streams, fields, or urban areas.	Moderate. No CNDDB-recorded occurrences within five miles, but suitable habitat is present in trees in the northernmost part of the project site, and in adjacent areas along the Cosumnes River.
Taxidea taxus	American badger	SSC; SSHCP	Open shrub, forest, and herbaceous habitats with friable soils to dig burrows. Associated with treeless regions, prairies, park lands and cold desert areas; not associated with cultivated ground. Requires sufficient prey of burrowing rodents. Range includes most of California, except the North Coast.	High. While this species has not been documented in the project site, a characteristic badger den was observed during reconnaissance surveys conducted by Dudek in 2021 and a historic (1990s) active den was recorded within five miles. Furthermore, SSHCP modeled habitat for this species is mapped in the project site.

Sources: Appendix BR-1; CDFW 2022; Cornell Lab 2021; Garrison 1998; County of Sacramento, et al. 2018; USFWS 2002, 2022a.

NOTES:
CESA = California Endangered Species Act
CNDDB = California Natural Diversity Database
DCH = Designated Critical Habitat
DPS = Distinct Population Segments
FDL = Federally de-listed under ESA
FE = Federally listed as endangered under ESA
FP = Fully Protected species identified by California Department of Fish and Wildlife
FT = Federally listed as threatened under ESA
m = meter
SE = State of California listed as endangered under CESA
SCE = State of California candidate for listing as endangered under CESA
SSC = Species of Special Concern identified by California Department of Fish and Wildlife
SSHCP = South Sacramento Habitat Conservation Plan; under "Listing Status" refers to Covered Species under the South Sacramento Habitat Conservation Plan
ST = State of California listed as threatened under CESA
Potential for Occurrence Definitions:
Known to occur: The species, or evidence of its presence, has been documented in the project site.
High: The species has not been documented in the project site but is known to occur in the vicinity and species habitat is present.
Moderate: The species has not been documented in the vicinity, but the project site is within the known range of the species, and habitat for the species is present.
Low: The species has not been documented in the project site, but the project site is within the known range of the species, and habitat for the species is of low quality.

The following sensitive natural communities were identified in the project site: vernal pool habitat (i.e., consistent with Northern hardpan vernal pool habitat); annual grasslands that provide suitable foraging habitat for Swainson's hawk, white-tailed kite, and grassland-specialized birds (recognized as becoming increasingly rare and limited in the region); and potentially jurisdictional waters of the U.S. and of the State.

CFGC Section 1602 protected riparian communities and EFH (Central Valley steelhead and Chinook salmon) are present in areas adjacent to the northernmost portion of the project site. No designated critical habitat for any federally listed species (under Federal Endangered Species Act [ESA]) is present within or adjacent to the project site.

Northern Hardpan Vernal Pool

Northern hardpan vernal pool habitat is mapped within five miles of the project site; the closest occurrence is approximately 0.9 miles to the east (Plate BR-2). While this specific sensitive community type has not been confirmed to be present on-site, vernal pool habitat present within the project site resembles that of the sensitive community type Northern Hardpan Vernal Pool habitat, as described in Appendix BR-1 and in the SSHCP (County of Sacramento et al. 2018); vernal pool habitat within the project site is considered a sensitive community.

Grassland Bird Habitat

Grasslands occur throughout the project site. Regionally, grassland (i.e., Annual grassland) has been recognized in the SSHCP as essential for the long-term survival of many special-status species covered by the SSHCP and for conserving ecological functions of other associated land cover types (e.g., vernal pools and other wetlands, oak woodlands, and perennial grasslands).

Sacramento County recognizes grasslands in the eastern portion of the County as prime habitat for raptors (County of Sacramento 1993). Where grasslands contain native plant assemblages and where they occur adjacent to/intermixed with riparian, woodland, and wetland habitats, their ecological value increases.

Waters of the United States and Waters of the State

Jurisdictional wetlands and other waters of the U.S. and isolated wetlands/ waters (i.e., waters of the State) provide habitat, foraging, cover, migration, and movement corridors for both special-status and common species, and provide physical conveyance of surface water flows that can lessen the effects of large storm events, protecting habitat and other resources.

As described under "Aquatic Features," above, an aquatic resources delineation was conducted for the project by Dudek (Appendix BR-2). Dudek's preliminary assessment identified all wetlands and other waters present within the project site (5.92 acres) to be Waters of the State. Because jurisdiction has not been verified by regulatory agencies, all aquatic features within the project site (see Table BR-1) are considered to be potentially jurisdictional wetlands and/or other waters of the U.S. and are waters

(including wetlands, non-wetland waters, or other waters) of the State for the purposes of evaluation in this EIR.

Riparian Habitat

Riparian habitat (i.e., mixed riparian woodland and valley foothill riparian) is mapped along the Cosumnes River adjacent to, but outside of, the project site. Riparian vegetation is vegetation which occurs along a waterway and is dependent on and/or occurs because of the waterway itself and can include any habitat where herbaceous plants, shrub/scrubs, and/or trees of varying densities are growing along waterways with a defined bed and bank, including within the floodplain of waterways. A detailed description of riparian habitat is provided in Appendix BR-1.

Essential Fish Habitat

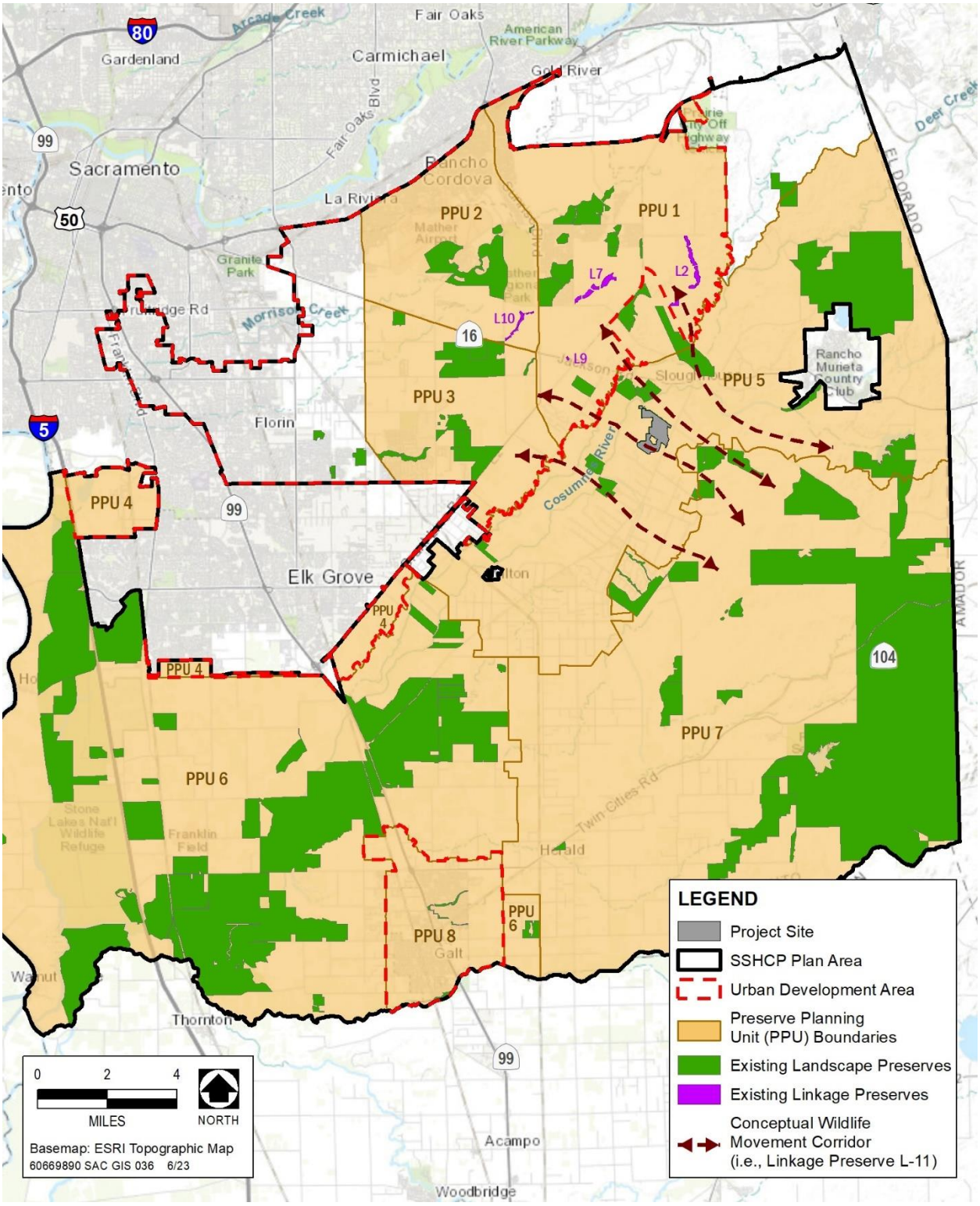
EFH is located along the Cosumnes River adjacent to, but outside of, the project site. EFH, designated by the National Oceanic and Atmospheric Administration, is the geographic area that contains features essential to the conservation of the listed species and is specific to aquatic habitat where federally managed fish species and invertebrates live and reproduce.

Wildlife Corridors and Habitat Linkages

According to the California Essential Habitat Connectivity Project, the Cosumnes River corridor, north-northwest of the project site, is considered a potential riparian connection, providing important native habitat for resident wildlife and linkages to additional native habitat in the surrounding area (Spencer et al. 2010). The SSCHP recognizes the Cosumnes River Corridor as a part of SSHCP Preserve Planning Unit (PPU) 5 (i.e., a linkage to targeted preserve areas within the region).

The California Essential Habitat Connectivity Project also identifies much of the grasslands within the project site as natural areas that are important to maintaining ecological integrity. In addition, the SSHCP describes conceptual wildlife movement corridors through PPU 5 but does not specifically map any Linkage Preserves outside the Urban Development Area (UDA). The SSCHP conceptually identifies Linkage Preserve L-11 that would connect the Cosumnes River/Deer Creek Wildlife Movement Corridor to the existing large Landscape Preserve to the southeast of the project site, in PPU 7; Linkage Preserve L-11 would overlap the general project site vicinity. Under existing conditions, the project site provides relatively uninterrupted connectivity between the Cosumnes River corridor and preserved lands to the south and east. This linkage area is potentially important to the SSHCP conservation strategy. See the SSHCP section below for additional information regarding the PPUs. A map of the SSHCP planning areas, including the PPUs, existing preserves, and conceptual wildlife movement corridors is included as Plate BR-3.

Plate BR-3: South Sacramento Habitat Conservation Plan Planning Areas



Sources: Dudek 2022; Sacramento County 2022

REGULATORY SETTING

See Appendix BR-1 for a detailed description of the following relevant federal, State, and local regulations; a brief summary is provided below.

FEDERAL

ENDANGERED SPECIES ACT, 16 U.S.C. SECTION 1531 ET SEQ

Pursuant to the federal ESA (16 U.S. Code [U.S.C.] Section 1531 et seq.), USFWS has regulatory authority over species listed or proposed for listing as endangered or threatened. In general, persons subject to federal ESA (including private parties) are prohibited from "taking" endangered or threatened fish and wildlife species on private property, and from "taking" endangered or threatened plants in areas under federal jurisdiction or in violation of state law.

CLEAN WATER ACT, 33 U.S.C. SECTION 1251 ET SEQ.

Section 404 of the Federal CWA requires a project applicant to obtain a permit from the USACE before engaging in any activity that involves any discharge of dredged or fill material placed in waters of the U.S., including wetlands. Under Section 401 of the CWA, an applicant applying for a Section 404 permit must obtain a certificate from the appropriate state agency stating that the intended dredging or filling activity is consistent with the state's water quality standards and criteria.

MIGRATORY BIRD TREATY ACT, 16 U.S.C. SECTION 703, ET SEQ.

The Migratory Bird Treaty Act provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. This prohibition includes both direct and indirect acts, although harassment and habitat modification are not included unless they result in direct loss of birds, nests, or eggs.

BALD AND GOLDEN EAGLE PROTECTION ACT, 16 U.S.C. SECTION 668

The Bald and Golden Eagle Protection Act prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

State

California Environmental Quality Act, Public Resources Code Section 21000, et seq.

The CEQA requires public agencies undertaking discretionary actions to approve a project to first determine whether a project may have a significant effect on the environment, and then to prepare an environmental impact report if there is substantial evidence that the project may have a significant effect on the environment. Where an environmental impact report has been prepared, CEQA further requires public agencies to adopt findings with respect to each significant effect that "changes or alterations have been required in, or incorporated, into the project which mitigate or avoid the significant effects on the environment; that those changes are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency; or that specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report" (Public Resources Code Section 21081[a]).

California Endangered Species Act, California Fish and Game Code Section 2050, et seq.

The California Endangered Species Act (CESA) directs state agencies not to approve projects that would jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of a species. Furthermore, CESA states that reasonable and prudent alternatives shall be developed by the CDFW, together with the project proponent and any state lead agency, consistent with conserving the species, while at the same time maintaining the project purpose to the greatest extent possible.

Lake and Streambed Alteration Program, California Fish and Game Code Section 1602

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Section 1602 of the CFGC. Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by CDFW, or use any material from the streambeds, without first notifying CDFW of such activity and obtaining a final agreement authorizing such activity.

Porter-Cologne Water Quality Control Act, California Water Code Section 13000, et seq.

The Porter-Cologne Act (California Water Code Section 13000, *et seq.*) requires that each of the state's nine RWQCBs prepare and periodically update basin plans for water quality control. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. The RWQCB's jurisdiction includes federally protected waters,

as well as areas that meet the definition of “waters of the state” defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB has the discretion to take jurisdiction over areas not federally regulated under Section 401 provided they meet the definition of waters of the state.

Fully Protected Species, California Fish and Game Code Sections 3511, 4700, 5050, and 5515

These statutes prohibit take or possession at any time of fully protected species. CDFW has informed nonfederal agencies and private parties that they must avoid take of any fully protected species in carrying out projects.

Protection of Bird Nests and Raptors, California Fish and Game Code Section 3503

Section 3503 of the CFGC states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Typical violations include destruction of active nests because of tree removal and failure of nesting attempts, resulting in loss of eggs and/or young.

Protection of Non-Game Mammals, California Fish and Game Code Section 4150

CFGC Section 4150 states a mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a non-game mammal. A non-game mammal may not be taken or possessed under this code.

Native Plant Protection Act, California Fish and Game Code Sections 1900 et seq.

The purpose of the act is to preserve, protect, and enhance endangered or rare native plants of California. The act allows landowners to take listed plant species from (among other places) a canal, lateral ditch, building site, road, or other right-of-way, provided that the landowner first notifies CDFW and gives the agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed.

State Tree Protection Regulations

State laws that regulate and/or protect oaks and oak woodlands include the California Oak Woodlands Conservation Act (CFGC Sections 1360–1372) which protects oak stands of more than 10 percent cover, the Professional Foresters Law, CEQA, and adopted regulations of the Board of Forestry and Fire Protection. Both the Professional Foresters Law and CEQA apply to all local jurisdictions.

LOCAL

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN

The SSHCP provides a framework to improve conservation of natural resources, including endangered species habitat, while streamlining the permitting process for planned development, infrastructure, and maintenance activities. The SSHCP provides take authorization for 28 Covered Species with potential to occur in the Plan Area and includes conservation actions to protect all 28 Covered Species whether they are currently listed or not. The SSHCP plans to establish an interconnected preserve system that supplements, complements, and links together existing preserves in the Plan Area. The SSHCP Permit term is 50 years. The Plan Area is divided into the area within the UDA, where all proposed urbanization will occur and some preserves will be established, and the area outside the UDA (Plate BR-3). Most preservation associated with the SSHCP, approximately 27,554 acres, will occur outside of the UDA with the intent to protect agricultural lands, as well as habitat for Covered Species. Only limited development activities (i.e., infrastructure) are covered by the SSHCP in areas outside the UDA. The SSHCP conservation strategy divides the Plan Area into 8 PPUs that provide geographic representation across the preserve system and that each contain important Covered Species Resources targeted for preservation.

The project site is outside of the UDA and solar development is not a covered activity under the SSHCP. As a result, the project would not receive take coverage under the SSHCP. Therefore, the project is not required to implement or comply with the provisions of the SSHCP. However, the project site is located within the SSHCP Plan Area that includes much of southeastern Sacramento County, specifically within the SSHCP PPU 5 (Plate BR-3). The dominant land cover in PPU 5 is grassland, but PPU 5 is also important for riparian-dependent species; it contains nearly all of the recorded occurrences for the valley elderberry longhorn beetle within the SSHCP Plan Area. PPU 5 encompasses 52,534 acres, approximately 6,500 acres of which are in existing preserves and 1,691 acres of which are proposed for SSHCP preserves.

SACRAMENTO COUNTY GENERAL PLAN

The Sacramento County General Plan was last comprehensively updated in November 2011, with a planning horizon of 2030. The General Plan includes goals, policies, and implementation programs to protect environmental resources that are important elements in the quality of life of Sacramento County residents. The following are General Plan Conservation Element objectives and policies pertaining to biological and aquatic resources in Sacramento County that are most relevant to the proposed project.

HABITAT PROTECTION AND MANAGEMENT

HABITAT MITIGATION OBJECTIVE: Mitigate and restore for natural habitat and special-status species loss.

POLICIES:

CO-58. Ensure no net loss of wetlands, riparian woodlands, and oak woodlands.

CO-59. Ensure mitigation occurs for any loss of or modification to the following types of acreage and habitat function: (1) vernal pools, (2) wetlands, (3) riparian, (4) native vegetative habitat, and (5) special-status species habitat.

CO-60. Mitigation should be directed to lands identified on the Open Space Vision Diagram and associated component maps.

CO-61. Mitigation should be consistent with Sacramento County-adopted habitat conservation plans.

CO-62. Permanently protect land required as mitigation.

HABITAT PRESERVE AND MANAGEMENT OBJECTIVE: Establish and manage a preserve system with large core and landscape level preserves connected by wildlife corridors throughout Sacramento County to protect ecological functions and species populations.

POLICIES:

CO-66. Mitigation sites shall have a monitoring and management program including an adaptive management component including an established funding mechanism. The programs shall be consistent with Habitat Conservation Plans that have been adopted or are in draft format.

LANDMARK AND HERITAGE TREE PROTECTION OBJECTIVE: Heritage and landmark tree resources preserved and protected for their historic, economic, and environmental functions.

POLICIES:

CO-138. Protect and preserve non-oak native trees along riparian areas if used by Swainson's Hawk, as well as landmark and native oak trees measuring a minimum of 6 inches in diameter or 10 inches aggregate for multi-trunk trees at 4.5 feet above ground.

CO-139. Native trees other than oaks, which cannot be protected through development, shall be replaced with in-kind species in accordance with established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed.

SWAINSON'S HAWK IMPACT MITIGATION FEE ORDINANCE

In 1997, in response to the need to mitigate for the loss of Swainson's hawk foraging habitat in Sacramento County, the Board of Supervisors adopted an ordinance that established a Swainson's Hawk Impact Mitigation Program (Sacramento County Code Chapter 16.130 *Swainson's Hawk Impact Mitigation Fees*). Under the Swainson's Hawk

Impact Mitigation Program, only projects which have a permanent impact of less than 40 acres are eligible to pay fees. Projects impacting 40 acres or more of foraging habitat must provide compensatory land acceptable to CDFW and the County.

County of Sacramento Tree Protection Ordinance

The County of Sacramento Tree Protection Ordinance (Sacramento County Code Chapter 19.12 *Tree Preservation and Protection*) governs the removal and preservation of trees on public property and specified private property within the County, specifically within the UDA. Because the proposed project site is located outside the UDA, it is not subject to protection under this Ordinance; instead, Sacramento County General Plan Policy CO-138, described above, would be applicable to tree protection within the project site.

Impacts and Analysis

This section presents the biological resources impact analysis for the proposed project including thresholds of significance, methods of analysis, and avoidance, minimization and/or compensatory mitigation measures.

Significance Criteria

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the CEQA Guidelines, as amended, and are consistent with Sacramento County policies, codes, and regulations. The proposed project would result in a significant impact related to biological resources if any of the following occur:

- 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 CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS;
- 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;
- 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;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted HCP, natural community conservation plan, or other approved local, regional, or state HCP.

METHODOLOGY

This section analyzes potential direct and indirect impacts and temporary and permanent impacts on biological resources that have the potential to result from project implementation.

Direct impacts are caused by the project and occur at the same time and place. Direct permanent impacts refer to the permanent physical loss of a biological resource typically due to clearing and grading associated with project implementation (e.g., permanent loss of vegetation/wildlife habitat, injury/mortality of individual plants or wildlife, permanent interference with wildlife movement or habitat connectivity). Temporary impacts refer to a temporary loss of biological resources that would generally occur for a short period (e.g., up to approximately one year) and would normally be reversible (e.g., temporary removal of vegetation during construction after which revegetation would occur).

Indirect impacts are reasonably foreseeable project effects on adjacent biological resources outside the direct disturbance zone that may occur typically during construction, such as from dust, noise, vibration, increased human activity, and pollutants. Indirect impacts also include project-related effects that could occur later in time, such as changes to hydrology, introduction of invasive species, operations-related dust and noise that persist after construction is complete.

Potential impacts on biological resources resulting from implementation of the proposed project were determined by mapping and quantifying common and sensitive habitats, including SSHCP modeled habitats, within the project site, by identifying potential effects to special-status species that could result from loss of these habitats and from other potential project-related direct and indirect effects, by evaluating the location and spatial context of wildlife movement corridors and known nursery sites relative to proposed project activities, and assessing the consistency with local policies and ordinances including the SSHCP Conservation Strategy.

A detailed analysis and impact determinations are provided in the following section for each specific impact topic.

PROJECT IMPACTS AND MITIGATION MEASURES

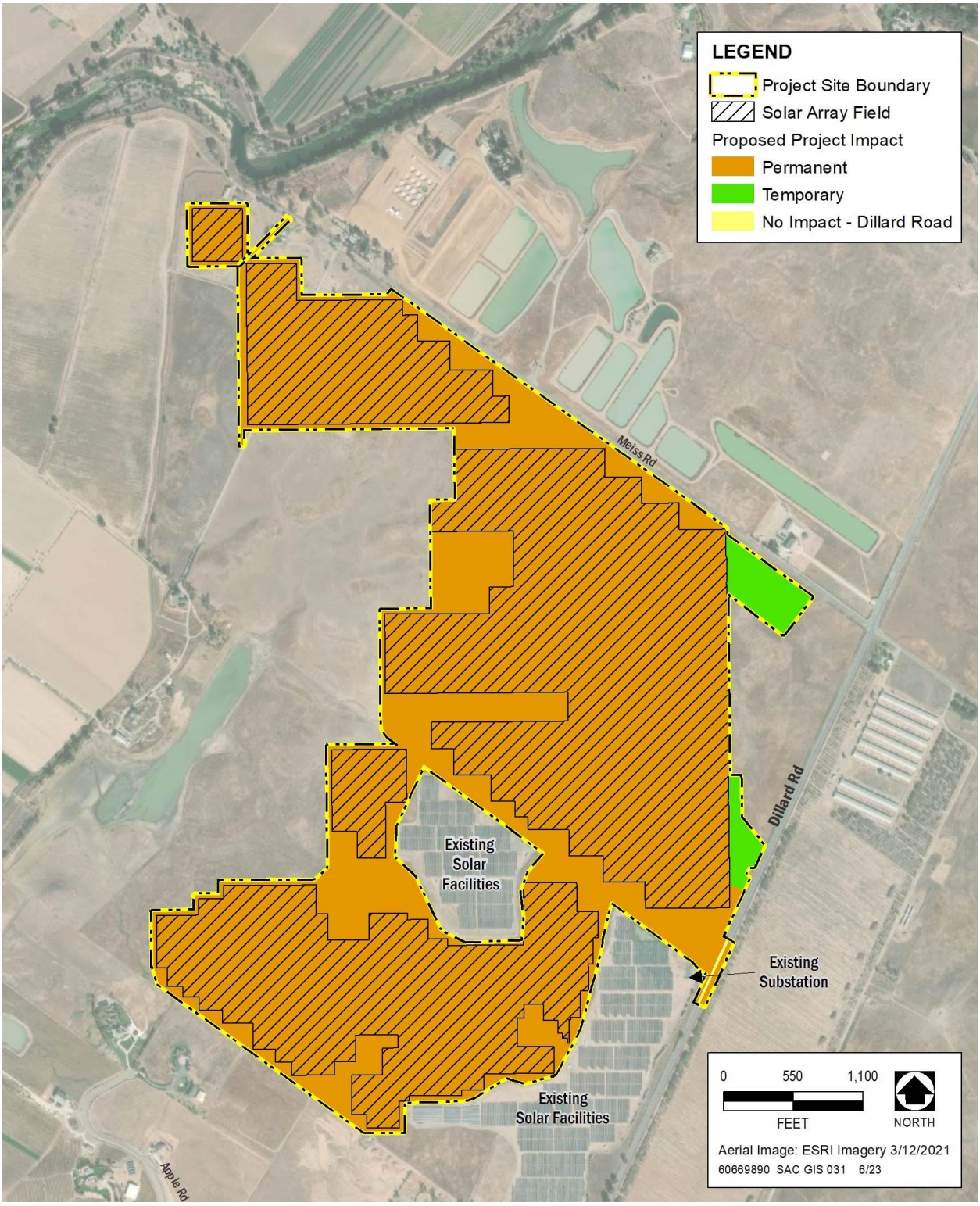
The proposed project has the potential to adversely affect common and sensitive biological resources. The proposed project's potential primary direct impacts on biological resources include habitat loss, habitat fragmentation, and disturbance to, or injury/mortality of, special-status species. The temporary and permanent loss of habitat would result from construction activities within the footprint of all project components within the proposed facility fenceline, including solar arrays, battery storage, roads, temporary work and staging areas, electrical infrastructure, and employee access and operations/maintenance infrastructure. Disturbance to wildlife could occur temporarily during construction if activities create visual, audible, or other physical (e.g., vibration) disturbances that would affect wildlife behavior in a way that would reduce their ability to forage, reproduce, and/or move through the area. Ongoing impacts on wildlife during project operation could also occur as a result of increased human presence and activities

in the area, including visual and noise disturbances, as well as direct impacts related to collisions with solar arrays (Kagan et al. 2014) or collisions/electrocutions associated with electrical infrastructure (Huso et al. 2016). Plate BR-4 identifies the temporary and permanent disturbance footprint for the proposed project. Table BR-6 provides an overview of temporary and permanent impacts to vegetation communities and land cover types from the proposed project. For the purposes of this evaluation, it is assumed that permanent habitat loss as a result of land cover conversion would occur throughout the entire area within the proposed facility fenceline, except temporary construction yards. Direct permanent impacts have been assumed for the following project elements (refer to Plate PD-6):

- Project access roads
- Battery energy storage
- Point of interconnection (POI)/Substation
- Solar array field
- Fenceline
- Outside work area

While solar panels would create permanent overhead cover along rows of solar arrays within the solar array fields, much of the existing vegetation beneath the panels and between rows and array blocks would remain unaffected or would be restored to grassland soon after project construction. Because detailed design plans were not available at the time of the notice of preparation (NOP) for the proposed project, it has been conservatively assumed that the full extent of the area within the proposed facility fenceline (except temporary construction yards) and including site access roads would be permanently impacted. However, this assumption is conservative and is likely to overestimate actual impacts of the project on vegetative ground cover (i.e., grassland) once the proposed project is fully designed and implemented. Temporary impacts would result from the use of temporary construction yards.

Plate BR-4: Proposed Project Impact Footprint



Sources: Dudek 2022, Compiled by AECOM 2023

Table BR-5: Proposed Project Maximum Potential Impacts on Vegetation Communities/Land Cover Types

Vegetation Community/Land Cover Type[1]	Permanent Impact (Acres)[2]	Temporary Impact (Acres)	No Impact—Dillard Road (Acres)
Upland Cover Types			
Annual Grassland	353.02	8.47	0
Low Density Development	11.28	0	0
Urban	1.52	0	0.24
Subtotal—Upland Cover Types	***365.81***	***8.47***	***0.24***
Aquatic Cover Types			
Ephemeral Drainage	0.73	0	0
Intermittent Drainage	0.46	0	0
Seasonal Wetland Swale	0.70	0	0
Upland Swale	0.08	0	0
Pond	0.37	0	0
Seasonal Wetland	2.97	0.18	0
Vernal Pool	0.25	0	0
Ditch	0.12	0	0.04
Subtotal—Aquatic Cover Types	***5.69***	***0.18***	***0.04***
Total	**371.51**	**8.65**	**0.27**

Sources: Dudek (pers comm, 2022); compiled by AECOM 2023
Notes:
[1] Upland Types based on the vegetation community and land cover classification system used in the FRAP dataset (FRAP 2019). Aquatic Cover Types based on a site-specific wetland delineation conducted by Dudek (see Appendix BR-2).
[2] Permanent impact acreages presented in this table assume that the full extent of the area within the proposed facility fenceline, except temporary construction yards, and including access roads, (see Plate BR-4) would be a direct permanent impact – this is a conservative assumption that is likely to overestimate the actual impacts. While solar panels would create permanent overhead cover along rows of solar arrays within the solar field arrays, much of the existing vegetation beneath the panels and between the solar rows and blocks would remain unaffected or be restored after project construction.

IMPACT BR-1: 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 CDFW OR USFWS

IMPACT SUMMARY

Ground-disturbing activities during project construction (including farmstead demolition) would result in the temporary and permanent removal of, or degradation (e.g., through erosion or sedimentation) to habitats that are potentially suitable for and/or known to be occupied by special-status plants and wildlife. Noise, vibrations, visual or physical disturbances, and fugitive dust generated during construction or operations could harm

or kill special-status plants and wildlife or cause special-status wildlife to abandon essential life history functions (e.g., breeding sites) within or adjacent to the project site. Accidental spills/leaks from construction- or operations-related equipment use could expose special-status plants and wildlife to harmful pollutants. Construction vehicles and equipment used during construction and operations could introduce weeds that degrade wildlife habitat or compete with special-status plants. Operation of electrical infrastructure (e.g., overhead powerlines, transformers, substation) could cause injury or mortality of special-status wildlife from collision or electrocution. Trash and material stockpiles generated during construction and water use during construction and operations and maintenance activities (e.g., dust control, washing solar modules) could attract wildlife into harm's way or attract predators that harm special-status wildlife. Decommissioning activities would have a short-term adverse impact on special-status species that continue to use the project site during operations, but is likely to have a long-term beneficial impact on special-status species, in particular grassland associated species. Depending on the level of restoration achievable on-site, wetland-associated species may also benefit from decommissioning. Species-specific details regarding impacts are described in the sections that follow. Impacts on special-status species resulting from project construction, operations and maintenance activities, and decommissioning would be **potentially significant**.

To avoid and minimize general construction-related impacts on special-status plants and wildlife, the following general avoidance and minimization measures (AMMs), based on *SSCHP General Condition 2 – Implement Construction Best Management Practices* and *General Covered Species Take Avoidance and Minimization Measures,* shall be implemented during construction and decommissioning of the project. While the project is not a covered activity under the SSHCP, use of these relevant and appropriate AMMs from the SSHCP allow for a consistent approach to mitigation within the SSHCP Plan Area and make up Mitigation Measure BR-1a:

Mitigation Measures

BR-1a: Implement Construction Best Management Practices to Avoid and Minimize Potential for Construction-Related Impacts on Special-Status Plants and Wildlife.

- **BMP-1 (Construction Fencing).** Orange construction fencing, or equivalent, shall be installed to ensure that ground disturbance does not extend beyond the allowed construction footprint (i.e., the limit of project construction plus equipment staging areas, vehicle parking, materials storage, and newly-developed access roads). The fencing shall remain in place until project completion.
- **BMP-2 (Erosion Control).** Before implementing ground-disturbing activities, temporary control measures for sediment, stormwater, and pollutant runoff shall be installed to protect water quality and species habitat. Silt fencing or other appropriate sediment control device(s) shall be installed downslope of any activities that disturbs soils. Fiber rolls and seed mixtures used for erosion control shall be free of viable noxious weed seed. Erosion controls installed in or adjacent to modeled habitat for western pond turtle, California tiger

salamander, and western spadefoot must be of appropriate design and materials that shall not entrap the species (e.g., not contain mesh netting). Regular monitoring and maintenance of the project's erosion control measures shall be conducted until project completion to ensure effective operation of erosion control measures.

- **BMP-3 (Equipment Storage and Fueling).** During construction activities, equipment storage and staging shall occur only in the development footprint. Fuel storage and equipment fueling shall occur away from waterways, stream channels, stream banks, and other environmentally sensitive areas within the development footprint. If construction activities result in a spill of fuel, hydraulic fluid, lubricants, or other petroleum products, the spill shall be absorbed, and waste disposed of in a manner to prevent pollutants from entering a waterway or stream setback.
- **BMP-4 (Erodible Materials).** Construction activities must not deposit erodible materials into waterways; vegetation clippings, brush, loose soils, or other debris material shall not be stockpiled within stream channels or on adjacent banks. Erodible material must be disposed of such that it cannot enter a waterway, stream setback or aquatic land cover type. If water and sludge must be pumped from a subdrain or other structure, the material shall be conveyed to a temporary settling basin to prevent sediment from entering a waterway.
- **BMP-5 (Dust Control).** During ground-disturbing construction activities, active construction sites shall be watered regularly, if warranted, to avoid or minimize impacts from construction dust on adjacent vegetation and wildlife habitats. No surface water shall be used from aquatic land covers and water shall be obtained from a municipal source or existing groundwater well.
- **BMP-6 (Construction Lighting).** All temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) shall be directed away from adjacent natural habitats, and particularly riparian and wetland habitats and wildlife movement areas.
- **BMP-7 (Biological Monitor).** A construction monitor shall be on-site during construction activities as needed, as described below in Mitigation Measure BR-1c (California Tiger Salamander and Western Spadefoot), Mitigation Measure BR-1d (Western Pond Turtle), Mitigation Measure BR-1e (Western Burrowing Owl), Mitigation Measure BR-1f (Swainson's Hawk), Mitigation Measure BR-1g (Tricolored Blackbird), Mitigation Measure BR-1h (Valley Elderberry Longhorn Beetle), Mitigation Measure BR-1k (Bats), and Mitigation Measure BR-1l (Nesting Raptors and Migratory Birds).
- **BMP-8 (Training of Construction Staff).** A mandatory Worker Environmental Awareness Program (WEAP) shall be conducted by a qualified biologist for all construction workers, including contractors, prior to the commencement of construction activities. The training shall include how to identify Covered Species that might enter the construction site, relevant life history information and habitats, statutory requirements and the consequences of non-compliance, the boundaries of the construction area and permitted disturbance zones, litter

control training (SPECIES-1), and appropriate protocols if a Covered Species is encountered.

Supporting materials containing training information shall be prepared and distributed by the qualified biologist. When necessary, training and supporting materials shall also be provided in Spanish. Upon completion of training, construction personnel shall sign a form stating that they attended the training and understand all AMMs.

- **BMP-9 (Soil Compaction).** After construction is complete, all temporarily disturbed areas shall be restored similar to pre-project conditions, including impacts relating to soil compaction, water infiltration capacity, and soil hydrologic characteristics.
- **BMP-10 (Revegetation).** Cut-and-fill slopes shall be revegetated with native or existing non-invasive, non-native plants (e.g., non-native grasses) suitable for the altered soil conditions.
- **BMP-11 (Speed Limit).** Project-related vehicles shall observe the posted speed limits on paved roads and a 10-mile-per-hour speed limit on unpaved roads and during travel in project areas. Construction crews shall be given weekly tailgate instruction to travel only on designated and marked existing, cross-country, and project-only roads.
- **SPECIES-1 (Litter Removal Program).** A litter control program shall be instituted for the entire project site. All workers shall ensure that their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. All garbage shall be removed from the project site at the end of each work day, and construction personnel shall not feed or otherwise attract wildlife to the area where construction activities are taking place.
- **SPECIES-2 (No Pets in Construction Areas)**. To avoid harm and harassment of native species, workers and visitors shall not bring pets onto a project site.

A species-specific impact analysis and identification of required mitigation are provided in the following sections.

Special-Status Plant Species

No special-status plant occurrences have been documented within the project site or within 1.5 miles of the project site, and no special-status plants were detected within the project site during project protocol-level rare plant surveys. However, because rainfall was low in the year surveys were conducted (2021), 13 special-status plant species are considered to have potential to occur, primarily in vernal pools and other aquatic habitats within the grassland matrix, and could be affected by the project. Additional rare plant surveys initiated in the wet spring of 2023 have so far resulted in no observations of special-status plants.

The proposed project would have no effect on known occurrences of or designated critical habitat for special-status plants because no recorded occurrences or critical habitat are

within 1.5 miles of the project site. Project implementation would result in the temporary and permanent loss of vernal pools, other aquatic habitat types, and annual grasslands that could support special-status plants (Table BR-5), thereby reducing the extent of potential habitat locally available for these species. However, the Aquatic Resources Mitigation Plan required as part of Mitigation Measure BR-3 (see Impact BR-3, below), would compensate for the potential loss of aquatic habitats that could support these species, if impacts cannot be avoided.

Project implementation could also result in removal of and/or damage to (e.g., crushing special-status plant species) from the use of construction equipment within the project site associated with vegetation removal and grading. Degradation of adjacent habitat could result from fugitive dust or introduction of invasive weeds. Degradation of adjacent habitat from stormwater runoff or changes in on-site hydrology would not be expected because the project would be required to comply with State and local polices, plans, and ordinances (including permit terms) related to water quality (see Impact HWQ-1 in Chapter 9, “Hydrology and Water Quality”). These potential impacts would be greatest on special-status plant species with the most restricted ranges and limited populations (e.g., pincushion navarretia, Sacramento Orcutt grass, and slender Orcutt grass).

The potential damage to or loss of any special-status plants or occupied habitat for these species would be considered a **potentially significant** impact.

To reduce impacts to special-status plant species to less than significant, the following Mitigation Measure BR-1b shall be implemented as part of the project:

Mitigation Measures

BR-1b: Avoid, Minimize, and Mitigate for Impacts on Special-Status Plants

The following measures shall be implemented to avoid, minimize, and mitigate for special-status plant species, sensitive natural communities, and protected wetlands with potential to occur in the project area.

- A preconstruction protocol-level botanical survey shall be conducted within the project site for special-status plant species (Table BR-3) with potential to occur and, where access is permitted, within a 250-foot buffer of the project site. Surveys shall be conducted by a qualified botanist and in accordance with the most recent CDFW and CNPS survey guidelines, including conducting surveys during appropriate bloom periods for targeted species. All attempts shall be made to conduct this survey during a year with favorable conditions (i.e., adequate rainfall). If no special-status species are observed during the preconstruction survey, then no further actions or mitigation are required.
- If the preconstruction survey detects the presence of any federally-listed plant species (e.g., Sacramento Orcutt grass, slender Orcutt grass), the occurrence(s) shall be mapped and protected from project-related disturbances by implementing applicable impact avoidance measures consistent with the SSHCP (e.g., any Sacramento Orcutt grass or slender Orcutt grass

occurrences shall be and avoided by a minimum of 300 feet). Coordination with USFWS and CDFW shall be required to confirm adequate protection prior to initiation of project-related ground disturbance.

- If the preconstruction survey detects the presence of any non-federally listed special-status or SSHCP-covered plant species within the project site or 250-foot buffer, the occurrence(s) shall be mapped and protected from any project-related disturbance activities by implementing applicable impact avoidance measures consistent with CDFW guidelines; or if no such guidelines exist, the occurrence shall be buffered by a minimum of 250 feet through the use of environmentally sensitive area (ESA) fencing with appropriate signage.
- A discussion of special-status plant species with potential to occur, sensitive natural communities, and sensitive aquatic resources shall be included in the WEAP discussed as BMP-8 under Mitigation Measure BR-1a.

If significant impacts on special-status plants cannot be avoided as described above, a Special-status Plant Compensatory Mitigation Plan (Plan) shall be developed prior to project implementaiton that identifies the residual significant impacts that require compensatory mitigation and describes the compensatory mitigation strategy being implemented and how unavoidable losses of special-status plants shall be compensated to achieve no-net reduction in population size (i.e., number of occurrences). The Plan would be consistent with CNPS (1998 or more current) mitigation guidelines. The project proponent shall consult with CDFW and/or any other applicable responsible agency prior to finalizing the Plan to satisfy that responsible agency's requirements. The first priority for compensatory mitigation shall be preserving and enhancing existing populations outside of the project area in perpetuity, or if that is not an option because existing populations that can be preserved in perpetuity are not available, one of the following mitigation options shall be implemented by the project proponent instead:

- creating populations on mitigation sites outside of the treatment area through seed collection and dispersal (annual species) or transplantation (perennial species);
- purchasing mitigation credits from a CDFW- or USFWS-approved conservation or mitigation bank in sufficient quantities to offset the loss of occupied habitat; and
- if the affected special-status plants are not listed under the federal ESA or CESA, compensatory mitigation may include restoring or enhancing degraded habitats so that they are made suitable to support special-status plant species in the future.
- If relocation efforts are part of the Plan, it shall include details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, success criteria, and remedial action responsibilities should the

initial effort fail to meet long-term monitoring requirements. The following performance standards shall be applied for relocation:

- the extent of occupied area shall be substantially similar to the affected occupied habitat and shall be suitable for self-producing populations.
- Relocated/re-established populations shall be considered suitable for self-producing when habitat conditions allow for plants to reestablish annually for a minimum of 5 years with no human intervention, such as supplemental seeding; and
- reestablished habitats contain an occupied area comparable to existing occupied habitat areas in similar habitat types in the region.

If preservation of existing populations or creation of new populations is part of the mitigation plan, the Plan shall include a summary of the proposed compensation lands and actions (e.g., the number and type of credits, location of mitigation bank or easement, restoration or enhancement actions), parties responsible for the long-term management of the land, and the legal and funding mechanisms (e.g., holder of conservation easement or fee title). The project proponent shall submit evidence that the necessary mitigation has been implemented or that the project proponent has entered into a legal agreement to implement it and that compensatory plant populations shall be preserved in perpetuity. If mitigation includes dedication of conservation easements, purchase of mitigation credits, or other off-site conservation measures, the details of these measures shall be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, funding assurances, and success criteria such as those listed above and other details, as appropriate to target the preservation of long term viable populations. If mitigation includes restoring or enhancing habitat within the treatment area or outside of the treatment area, the Plan shall include a description of the proposed habitat improvements, success criteria that demonstrate the performance standard of maintained habitat function has been met, legal and funding mechanisms, and parties responsible for long-term management and monitoring of the restored habitat.

SPECIAL-STATUS WILDLIFE SPECIES

CALIFORNIA TIGER SALAMANDER

California tiger salamander has not been documented in the project site. No California tiger salamander larvae were observed during protocol-level aquatic larval surveys conducted for the project, aquatic features within the project site were found to generally lack required habitat characteristics for this species, and potential uplands were low quality (e.g., generally lacking small mammal burrows). Similarly, a detailed assessment of habitat within two kilometers (i.e., approximately 1.3 miles) of the project site (i.e., the maximum reasonable dispersal distance for this species) indicated poor habitat quality and movement barriers (see Appendix BR-1 for more detail). However, negative survey

findings from a single season of larval surveys does not necessarily demonstrate species absence from a site (USFWS 2003).

The proposed project would have no effect on known occurrences of or designated critical habitat for California tiger salamander, because neither are present in nor near the project site. Project implementation would result in the temporary and permanent loss of vernal pools and other aquatic habitat types (breeding habitat) that have a low potential to support this species (see Impact BR-3), and on annual grasslands (upland habitat) as shown in Table BR-5. However, the Aquatic Resources Mitigation Plan required as part of Mitigation Measure BR-3 (see Impact BR-3, below), would compensate for the potential loss of aquatic habitats that could support this species, if they cannot be avoided. Furthermore, the project would restore the majority of annual grasslands in and around solar fields as part of the implementation of the Agricultural Management Plan (see Mitigation Measure AL-1 in Chapter 4, "Agricultural Resources and Land Use"). Implementation of the Agricultural Management Plan would facilitate continued agricultural grazing on-site and would reduce project-related impacts on potential upland grassland habitat for this species.

Implementation of construction best management practices and the project stormwater pollution and prevention plan, as required by existing regulations (see Chapter 9, "Hydrology and Water Quality", Impact HWQ-3), would largely prevent sedimentation and runoff related impacts to off-site wetlands and grassland that might support this species.

California tiger salamander could be injured or killed by the use of construction equipment or vehicles, and/or during the removal of vegetation/habitat, if they are present during ground disturbing activities (including as a result of vibration-induced emergence from burrows). Individuals could be injured or killed during seasonal overland migrations from the use of equipment/vehicles during operations, if project operations occur between aestivation and breeding sites. Indirect impacts include degradation of adjacent habitat from stormwater runoff, fugitive dust or pollution, or changes in hydrology from site development.

The likelihood of these impacts is low given the low potential for this species to occur on the project site and lack of detection during surveys. However, any potential impact on California tiger salamander or potential/occupied habitat would be considered a **potentially significant** impact.

To reduce impacts to California tiger salamander to less than significant, Mitigation Measure BR-1c (Avoid, Minimize, and Mitigate for Impacts on California Tiger Salamander and Western Spadefoot) shall be implemented as part of the project.

WESTERN SPADEFOOT

Western spadefoot has not been documented in the project site. No western spadefoot or their larval masses were observed during focused surveys conducted for this species for the project. However, potentially suitable aquatic and upland habitats for this species

are present in the project site and the potential for this species to occur cannot be ruled out from one season of negative aquatic survey results.

Western spadefoot could be affected by the project in similar ways as described above for the California tiger salamander, if present in the project site during project implementation. Injury to or mortality of western spadefoot individuals would be considered a **potentially significant** impact.

To reduce impacts to western spadefoot to less than significant, Mitigation Measure BR-1c (Avoid, Minimize, and Mitigate for Impacts on California Tiger Salamander and Western Spadefoot) shall be implemented as part of the project.

Mitigation Measures

BR-1c: Avoid, Minimize, and Mitigate for Impacts on California Tiger Salamander and Western Spadefoot.

- Implement Mitigation Measure AL-1 (see Chapter 4, "Agricultural Resources and Land Use").
- Unless a smaller buffer is approved through formal consultation with USFWS, temporary construction fencing shall be installed a minimum of 250 feet from the delineated wetland edge of any potentially suitable aquatic habitats (e.g., vernal pools, seasonal wetlands) for California tiger salamander and western spadefoot. All construction and operations activities are prohibited within this buffer area. If avoidance of potential aquatic habitats, as described, is not feasible, project ground-disturbing activities within such areas shall be restricted to during the dry season.
- Project ground-disturbing activities within suitable upland habitat for California tiger salamander and western spadefoot shall occur outside of their combined breeding and dispersal seasons (i.e., work to occur after May 15 and before October 15). If project ground-disturbing activities must be implemented during the breeding and dispersal season (October 15 to May 15), activities shall not start until 30 minutes after sunrise and must be completed 30 minutes prior to sunset. In addition, a qualified biologist shall survey the active work areas (including access roads) in mornings following measurable precipitation events. Construction may commence once the biologist has confirmed that no spadefoot or California tiger salamander are in the work area.
- If project ground-disturbing activities must be implemented in potentially suitable habitat for these species, a qualified biologist experienced with California tiger salamander and western spadefoot identification and behavior shall monitor the project site. The qualified biologist shall be on-site daily while construction-related activities are taking place and shall inspect the project site for these species every morning before 7:00 a.m., or prior to construction activities. The qualified biologist shall also train construction personnel on the required species avoidance procedures, and correct protocols in the event that a California tiger salamander or western spadefoot enters an active

construction zone. If one of these species is encountered, the following measure shall be implemented.

  - If a California tiger salamander or western spadefoot is encountered during project activities, the qualified biologist shall notify CDFW and USFWS (for California tiger salamander) immediately. Project activities shall be suspended within a 100-foot radius of the animal until the animal moves on its own volition, or is relocated by a qualified biologist with appropriate handling permits. Prior to relocation, the qualified biologist shall notify CDFW and USFWS to determine the appropriate procedures related to relocation. If the animal is handled, a report shall be submitted within one business day to CDFW and USFWS. Any worker who inadvertently injures or kills a California tiger salamander or western spadefoot or who finds any individual(s) dead, injured, or entrapped must immediately report the incident to the qualified biologist. The biologist shall report any take (i.e., injury or mortality) of listed species to USFWS and CDFW immediately.

- All excavated steep-walled holes or trenches more than six inches deep shall be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes or trenches shall be inspected by the qualified biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within potential habitat shall be inspected for California tiger salamanders and western spadefoot by the qualified biologist prior to being moved.
- If erosion control is necessary on the project site, non-entangling erosion control material shall be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material shall be used to ensure that sensitive amphibians are not trapped (no monofilament). Coconut coir matting and fiber rolls with burlap are examples of acceptable erosion control materials. This limitation shall be communicated to the contractor through use of special provisions included in the bid solicitation package.
- Rodent control shall be allowed only in and around human-occupied portions of the project site. Where rodent control is allowed, the method of rodent control shall comply with the methods of rodent control discussed in the 4(d) Rule published in the USFWS's (2004) final listing rule for tiger salamander.
- This species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.
- Implement Mitigation Measure BR-3, Avoid, Minimize, and Mitigate for Impacts on State and Federally Protected Wetlands.

NORTHWESTERN POND TURTLE

Northwestern pond turtle has not been documented in the project site. Furthermore, no northwestern pond turtles were observed during focused surveys conducted for this species for the project. However, the Cosumnes River to the north-northwest provides suitable aquatic habitat for northwestern pond turtle and this species could occur in the upland habitat within the project site.

Project implementation could impact this species if upland nesting or aestivation sites or individual turtles are present within the construction footprint during ground disturbance. Potential injury to or mortality of this species would be considered a **potentially significant** impact.

To reduce impacts to northwestern pond turtle to less than significant, the following Mitigation Measure BR-1d shall be implemented as part of the project:

MITIGATION MEASURES

BR-1d: Avoid, Minimize, and Mitigate for Impacts on Northwestern Pond Turtle

- For any project-related activities that occur within 300 feet of suitable habitat (e.g., any adjacent riparian woodland), project ground-disturbing activities shall be conducted outside of northwestern pond turtle's active season (i.e., work to occur after May 1 and before September 15). If project activities must be implemented during the breeding and dispersal season, they shall not start until 30 minutes after sunrise and must be completed 30 minutes prior to sunset.
- A qualified biologist shall conduct a preconstruction survey for northwestern pond turtle within 48 hours prior to the start of construction activities within 300 feet of suitable habitat (e.g., any adjacent riparian woodland along the Cosumnes River). Concurrently with the preconstruction survey, searches for nesting sites shall be conducted and any identified sites shall be delineated with high-visibility flagging or fencing and avoided during construction activities. If avoidance is not possible, the nest and/or turtle shall be removed and relocated to an appropriate location by a qualified biologist with appropriate permits.
- If turtles and/or nests are encountered during the preconstruction survey, a qualified biologist shall be present during grubbing and clearing activities in suitable habitat to monitor for northwestern pond turtle. If a turtle is observed in the active construction zone, construction shall be suspended within a 100-foot buffer, and a qualified biologist shall be notified. Construction may resume when the biologist has either hand-captured and relocated the turtle to nearby suitable habitat outside the construction zone, or, after thorough inspection, determined that the turtle has moved away from the construction zone.
- Implement BMP-11 (Speed Limits), included in Mitigation Measure BR-1a.
- This species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.

BURROWING OWL

Protocol nesting season surveys confirmed project site occupancy by burrowing owl; surveys identified two visual detections of burrowing owls (i.e., flushed from a burrow in use), and a total of 16 burrows with signs of use (e.g., pellets, whitewash, etc.). Open areas within the project site (i.e., annual grassland) provide suitable foraging and nesting habitat for this species.

Project implementation would result in the temporary and permanent loss of annual grasslands that are known breeding/foraging and potential wintering habitat for burrowing owl, as identified in Table BR-5. The large majority of permanent impacts are associated with the solar array field portion of the project, which would predominantly include open ground beneath individual solar panels and between rows and blocks of solar panels (i.e., subarrays) that would be restored to grassland upon completion of construction per Mitigation Measure AL-1 (Implement the Agricultural Management Plan, see Chapter 4). However, burrowing owls would not be expected to use solar array fields after construction because they typically inhabit areas that are open and sparse. Therefore, the entire area within the solar array field, and adjacent areas up to the facility fenceline, aside from the temporary construction yard, would be a permanent impact on burrowing owl. Permanent loss of grassland burrowing owl habitat would also result from construction of access roads, the battery energy storage, and POI/substation. Table BR-5 summarizes potential permanent and temporary impacts on burrowing owl habitat (i.e., grassland) from construction of the proposed project.

Annual grassland is abundant in the south Sacramento County area; the dominant land cover in SSHCP PPU 5, where the project site is located, is Valley Grassland (i.e., annual grassland) (27,463 acres). Approximately 32,907 acres of burrowing owl nesting/foraging habitat has been modeled in PPU 5. The project-related permanent loss of grasslands (see Table BR-5) that are suitable for burrowing owl nesting/foraging would represent approximately one percent of habitat currently available to this species in PPU 5.

Project indirect impacts could also cause habitat degradation similar to that described under “Special-status Plant Species,” above.

Construction-related ground disturbance could destroy potentially active burrows and/or occupied burrows during site clearing and grading, injure or kill individuals from equipment strikes, or harass individuals near occupied burrows to the extent that it causes reduced survival or nest success from construction noise or activity that agitates nesting birds. Project surveys identified one occupied burrow and an additional 15 potentially active burrows within the project site that could be impacted in this manner.

Injury to or mortality of burrowing owls, their nests, or young, or the removal of occupied burrow(s) would be considered a **potentially significant** impact. To reduce impacts to burrowing owl to less than significant, the following Mitigation Measure BR-1e shall be implemented as part of the proposed project.

Mitigation Measures

BR-1e: Avoid, Minimize, and Mitigate for Impacts on Western Burrowing Owl and Occupied Nesting Habitat

- Implement Mitigation Measure AL-1 (see Chapter 4, "Agricultural Resources and Land Use").
- A qualified biologist shall conduct a preconstruction survey for burrowing owl no more than 30 days prior to ground-disturbing activities to provide updated information on owl locations and occupied burrows for impact avoidance, minimization, and mitigation planning. The survey shall cover the limits of ground disturbance and potentially suitable habitat within 500 feet. The survey shall be consistent with CDFG (2012), or more current CDFW guidelines. If ground-disturbing activities are delayed, then additional surveys shall be conducted such that no more than 7 days elapse between the survey and ground-disturbing activities.
- A Burrowing Owl Mitigation and Management Plan shall be developed in consultation with CDFW and consistent with CDFG's *Staff Report on Burrowing Owl Mitigation* (March 2012), or more current CDFW guidelines prior to project construction. The CDFW-approved Burrowing Owl Mitigation and Management Plan shall be submitted to the County of Sacramento for review prior to the start of construction. The plan shall address long-term ecological sustainability and maintenance of the site for burrowing owls on the project site and in adjacent areas. The Plan shall require the applicant to achieve a performance standard of no net loss of burrowing owl nesting and foraging habitat acreage, function, and values and shall include the following elements:
  - A description of the preconstruction distribution and abundance of burrowing owls and existing habitat conditions at the project site.
  - Avoidance and minimization measures to be implemented during project construction to avoid direct and indirect impacts on burrowing owls (e.g., establishment of a minimum of 50 meters, up to 500 meters, non-disturbance buffers around active burrows depending on the time of year and type of activity, consistent with CDFW's 2012 Staff Report guidelines), including a discussion of any proposed passive relocation activities, if necessary (e.g., non-breeding season active burrows that cannot feasibly be avoided).
  - Proposed management of burrowing owl nesting and foraging habitat during project operation and maintenance to achieve the goal of no net loss of existing habitat value for burrowing owls.
  - A monitoring and reporting plan addressing implementation and success of the management plan and identifying actions needed to maintain foraging and nesting habitat and reduce stressors on wintering and nesting burrowing owls.

  - An adaptive management plan that includes remedial action to be taken if the performance standards of no net loss of burrowing owl nesting and foraging habitat value are not being met. Remedial action shall focus on site-specific enhancements, or if appropriate, acquisition of credits in a burrowing owl mitigation bank, or another form of mitigation acceptable to CDFW.
  - If CDFW determines that off-site compensatory mitigation is necessary to comply with the performance standard of no net loss of habitat acreage, function, and values for burrowing owls, compensation shall be consistent with the SSHCP goals of preserving and linking high-quality habitat, preserving and reestablishing natural land covers that provide suitable habitat, and maintaining or expanding the existing distribution of the species within the SSHCP Plan Area. The applicant may provide off-site compensatory mitigation through acquisition of a conservation easement or mitigation credits from an appropriate mitigation bank, as approved by CDFW.
- This species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.

SWAINSON'S HAWK

NESTING HABITAT

No active Swainson's hawk nests were observed within the project site during protocol surveys for the project and no known active nest sites are located within 0.5 miles of the project site; however, a potential nest site was identified during project surveys approximately 500 feet northeast of the project site. In addition, Swainson's hawk were observed foraging and courting within the project site. Large trees in adjacent areas, particularly along the riparian corridor of the Cosumnes River to the north-northwest, provide potential nesting habitat for this species outside of the project site. Trees located within the project site (see Table BR-2), primarily tree of heaven, are not typically considered suitable as nest sites for this species.

Project activities would not remove any known or potential Swainson's hawk nest trees. However, project construction activities, including grading and grubbing, near suitable nesting habitat could disturb active Swainson's hawk nest sites, if active nests become established within 0.5 miles of the project site during project construction. Increased levels of noise and human activity within 0.5 miles of an active nest could result in nest abandonment or forced fledging and subsequent loss of fertile eggs, nestlings, or juveniles. Construction-generated disturbances could also cause Swainson's hawk to temporarily avoid foraging on some or all of the project site.

FORAGING HABITAT

The project site and vicinity provide foraging habitat for Swainson's Hawk, as directly observed during project surveys. A potentially active nest site located northeast of the project site during project surveys highlights the potential suitability of the project site and vicinity as foraging habitat for locally nesting Swainson's hawk. Additionally, 53

Swainson's hawk nests or presumed nest sites (none active in the last 5 years) have been documented since 1979 within 10 miles of the project site – primarily along the Cosumnes River corridor (CDFW 2022), highlighting the potential regional value of grasslands in and near the project site as foraging habitat for this species. A total of 361.49 acres of annual grasslands suitable as foraging habitat for Swainson's Hawk is present within the project site (Table BR-1). Development of the proposed project would result in permanent and temporary impacts to grassland foraging habitat for Swainson's hawk as described below.

The permanent loss of grassland foraging habitat is assumed to result from construction of the solar facility within the full extent of the area within the proposed facility fenceline, with the exception of temporary construction yards, and including access roads (See Plate PD-6 and Plate BR-4). Specifically, construction of access roads, the battery energy storage, and the POI/substation would permanently convert grassland substrate to non-habitat (i.e., unvegetated condition). Within the solar array field, construction of project components like solar panel supports (i.e., footings) and inverters/transformers within subarrays (i.e., solar panel rows) would also permanently convert grassland substrate to non-habitat. However, because it is not definitively known whether Swainson's hawk would use areas beneath solar panels or between solar array rows or blocks, it has been conservatively assumed that all grasslands within the solar array field would be permanently converted to non-habitat and would result in a permanent loss of Swainson's hawk foraging habitat. Similarly, areas between solar array fields and the adjacent proposed facility fenceline (i.e., Outside Work Areas) may be too fragmented to support foraging Swainson's hawk; therefore, it has been conservatively assumed that Outside Work Areas would also no longer function as Swainson's hawk foraging habitat after project construction. Therefore, in total, 353.02 acres of grassland foraging habitat for Swainson's hawk would be permanently converted to non-habitat as a result of the proposed project.

Temporary disturbances to grassland foraging habitat would result from use of the temporary construction laydown yard. In total, 8.47 acres of grassland substrate suitable as foraging habitat for Swainson's hawk would be temporarily disturbed as a result of the proposed project. All temporary disturbance areas would be restored to grassland upon completion of construction and managed through a grazing program during operations to maintain low grass heights throughout the year, as required by Mitigation Measure AL-1 (see Mitigation Measure AL-1 in Chapter 4, "Agricultural Resources and Land Use"). Indirect impacts from adjacent facility operations within the solar array field could occur in areas subject to temporary disturbance (i.e., temporary construction yards) after these areas are restored, such as from noise or visual disturbances during maintenance activities that might temporarily alter use of these restored areas by Swainson's hawk.

Implementation of the Agricultural Management Plan (i.e., Mitigation Measure AL-1) would be expected to restore and maintain function to temporary impact areas as grassland foraging habitat for Swainson's hawk after project construction and throughout the operational life of the proposed solar facility.

Annual grassland is abundant in the south Sacramento County area; the dominant land cover in SSHCP PPU 5, within which the project site is located, is Valley Grassland (i.e.,

annual grassland) (27,463 acres). Approximately 32,129 acres of Swainson's hawk foraging habitat has been modeled in PPU 5. Additionally, Swainson's hawk foraging habitat within PPU 5 is not considered high value foraging habitat because of the relatively lower density of Swainson's hawk in the eastern half of south Sacramento County compared to the western half (Sacramento County et al. 2018). The SSHCP defines high-value habitat for Swainson's hawk as modeled habitat occurring in the western portion of the Plan Area, within PPUs 4, 6 and 8 (Sacramento County et al. 2018). PPU 5, where the project site is located, is identified as non-high value habitat. The project-related permanent loss of 353.02 acres of foraging habitat for Swainson's hawk would represent approximately one percent of non-high value foraging habitat currently modeled as available to this species in PPU 5.

While annual grassland that can serve as foraging habitat is regionally abundant and grasslands in the vicinity of the project site are not considered high value for this species regionally, the permanent loss of grassland within the project site could decrease available foraging habitat for locally nesting Swainson's hawks. Depending on the intensity of Swainson's hawk use of the affected foraging habitat, this decrease could result in displacement of nesting pairs, reduction in reproduction potential, or decreased survival rates, particularly for hawks nesting within 0.5 miles of the project site.

As such, the permanent loss of any grassland foraging habitat for Swainson's hawk, especially in proximity to potential nesting sites along the Cosumnes River, would be considered a significant impact that would likely require mitigation under the Sacramento County Swainson's Hawk Ordinance. Therefore, the permanent loss of an estimated 353.02 acres of Swainson's hawk grassland foraging habitat as a result of project development would be considered a significant impact to this species. Compliance with the Sacramento County Swainson's Hawk Ordinance would require the project to mitigate for this permanent loss of foraging habitat at no net loss of the existing foraging habitat value based on the agricultural land use zoning designation of the site. Being located on property with the AG-20 zoning designation, the project would likely be required by Sacramento County to mitigate foraging habitat losses to attain a value of 75 percent of the existing grassland habitat area, or the equivalent of 264.77 acres. The additional construction/relocation of a minimal length of gen-tie powerline from the substation to the existing SMUD regional distribution facilities located along Dillard Road could pose a collision and/or electrocution risk to Swainson's hawk in the vicinity of the project site.

Potential injury to or mortality of Swainson's hawk (including loss of an active nest) or the substantial permanent loss of foraging habitat, particularly if the habitat losses would affect the success of nearby Swainson's hawk nesting efforts, would be considered a **potentially significant** impact. To reduce impacts to Swainson's hawk and their foraging habitat to less than significant, the following Mitigation Measure BR-1f shall be implemented as part of the proposed project.

Mitigation Measures

BR-1f: Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and their Foraging Habitat

- Implement Mitigation Measure AL-1 (see Chapter 4, "Agricultural Resources and Land Use")
- During the year of project commencement, and each subsequent year in which project activities occur during the nesting season (e.g., March 1 through September 15), a qualified biologist shall conduct preconstruction surveys in accordance with *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Tech. Advisory Committee 2000); surveys shall only be required during the two survey periods immediately preceding the commencement of construction activities.
- Consistent with CDFW's recommendations identified in their *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks* (Buteo swainsoni) *in the Central Valley of California* (CDFG 1994), if nesting Swainson's hawk are identified within 0.5 miles of the project site during preconstruction nesting bird surveys (see Mitigation Measure BR-1l, below) or at any point during project construction, ongoing monitoring by a qualified biologist shall be required to ensure there are no unauthorized impacts to this species and its habitat; typically a 0.25- to 0.5-mile buffer of an active nest site shall be implemented during the nesting season (e.g., March 1 through September 15) until the young have fledged to avoid agitation to the nest. The requirement for monitoring shall be determined in consultation with CDFW biologists after they are notified of any nesting Swainson's hawk.
- To minimize potential for collision by or electrocution of nesting raptors or migratory birds from project-related electrical infrastructure, the electrical collection infrastructure shall conform with the most current edition of the Avian Power Line Interaction Committee (APLIC) guidelines to prevent collisions and electrocutions, found at: https://www.aplic.org/mission.
- Compensation shall be provided for the permanent loss of Swainson's hawk foraging habitat (i.e., grassland) to achieve a performance standard of no net loss of habitat acreage, function and values to Swainson's hawk. The project may achieve the performance standard through the County of Sacramento Swainson's Hawk Mitigation Program or other compensatory programs (e.g., mitigation banks; conservation easements). Under the County of Sacramento program, mitigation is required for the change in habitat value from the existing condition (75 percent of foraging habitat value remaining based on the AG-20 zoning) to the post-project habitat value. Permanent impacts to grassland foraging habitat from the proposed project would be determined once final approved construction design plans are completed and shall be compensated for at 75 percent of the acres of permanent impact; at the time of writing of this document, the total permanent impact on grassland foraging habitat was

estimated at 353.02 acres corresponding to a compensatory mitigation requirement of 264.77 acres.[2] For permanent impacts to Swainson's Hawk foraging habitat totaling greater than 40 acres, the County Swainson's Hawk Mitigation Program would require the project to provide mitigation lands (i.e., via title and/or easement). For permanent impacts to foraging habitat totaling less than 40 acres, an impact mitigation fee (per acre fee plus administrative fee) may be paid to the County in-lieu of providing mitigation lands or paid for acquisition of credits from a mitigation bank approved by CDFW. If compensation is achieved outside the Swainson's Hawk Mitigation Program, it shall at minimum meet the mitigation requirement of the Program.

- This species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.

TRICOLORED BLACKBIRD

Focused tricolored blackbird surveys for the project resulted in three observations of this species; no nesting colonies were observed. No suitable nesting habitat for this species was identified within the project site; however, potential nesting habitat is located in adjacent areas to the west of the project site near the Cosumnes River. Open grassland within the project site provides foraging habitat for this species.

Project construction could impact tricolored blackbird nests, but only if active nests for this species become established in suitable habitat within 500 feet of project activities, such as along the Cosumnes River to the north-northwest, prior to or at any time during construction. Increased levels of noise and human activity within 500 feet of an active nest colony could result in nest abandonment or forced fledging and subsequent loss of fertile eggs, nestlings, or juveniles. Construction-related disturbances could also cause tricolored blackbirds to temporarily avoid foraging in the project site. Project development would also result in the permanent loss of potential foraging habitat (i.e., grassland) for this species (see Table BR-5). Although there is a large amount of grassland available as foraging habitat in the region, the project-related removal could decrease available foraging habitat for locally nesting tricolored blackbirds which could in turn result in displacement of nesting pairs, reduction in reproductive potential, or decreased survival rates.

Potential injury to or mortality of tricolored blackbirds (including loss of an active nest) would be considered a **potentially significant** impact.

To reduce impacts to tricolored blackbird to less than significant, the following Mitigation Measure BR-1g shall be implemented as part of the project.

[2] If, at any point prior to final approval of the project by the County, CDFW recognizes any portion of solar array fields as providing foraging habitat value for Swainson's hawk during operations, the permanent impact on grassland foraging habitat from the proposed project, and associated required compensation, may be modified accordingly.

Mitigation Measures

BR-1g: Avoid, Minimize, and Mitigate for Impacts on Tricolored Blackbird

- To the maximum extent feasible, clearing, grubbing, removal, and/or disturbance (e.g., trimming) to any vegetation that is suitable tricolored blackbird nesting habitat shall be performed outside of the nesting season (September through March) to avoid impacts to nesting birds. If vegetation disturbance/removal cannot be avoided during the nesting season for this species, the following measures shall be implemented.
- A qualified biologist shall conduct a preconstruction survey for nesting tricolored blackbird approximately two days prior to vegetation or tree removal or ground-disturbing activities during the nesting season (approximately April through August). The survey shall cover the limits of construction and suitable nesting habitat within 500 feet.
- If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance (i.e., non-disturbance) buffer from the active nest. The buffer distance for tricolored blackbird shall generally be 500 feet and shall be determined based on factors such as topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction shall be established in the field with flagging, fencing, or other appropriate barriers to avoid active nests. Construction limits shall be based on the biologist-defined appropriate buffer distance and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.
- If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than 7 days elapse between the survey and vegetation removal activities.
- If an active nest is identified within 500 feet of the work area after construction has started, work within 500 feet of the nest shall be suspended until the qualified biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the birds have fledged, limitations on construction activities that generate substantial vibration and/or noise, and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest.
- This species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.

Valley Elderberry Longhorn Beetle

Valley elderberry longhorn beetle has been previously documented in the project study area along the Cosumnes River corridor, and a large proportion of known occurrences for this species in south Sacramento County are located along the Cosumnes River within

approximately three miles of the project site (CDFW 2022). Focused project surveys for this species identified 13 elderberry shrubs suitable for inhabitation by valley elderberry longhorn beetle (i.e., with stems one inch or greater), of which eight are in or within 165 feet from ground-disturbing project activities and could be affected by project implementation (see Appendix BR-1, Figure 9). Of these eight suitable elderberry shrubs, all are in non-riparian uplands, two possess relict bore/exit holes from a burrowing insect not confirmed to be valley elderberry longhorn beetle, and the remaining six had no evidence of use by valley elderberry longhorn beetle or any other boring insect (see Table BR-6).

Table BR-6: Summary of Valley Elderberry Longhorn Beetle Focused Surveys and Anticipated Impacts for the Proposed Project

Shrub ID	Habitat Context	Located in Project Site or Within 165 Feet from Ground-Disturbing Activities	Survey Result	Anticipated Impact Type[1]
1 [2]	Riparian	No	No presence observed	No Impact
2 [2]	Non-riparian	No	Relict bore/exit holes, no presence observed	No Impact
3 [2]	Riparian	No	No presence observed	No Impact
4 [2,3]	Non-riparian	***Yes***	No presence observed	Direct
5	Non-riparian	No	No presence observed	No Impact
6 [3]	Non-riparian	***Yes***	No presence observed	Indirect
7	Riparian	No	Relict bore/exit holes, no presence observed	No Impact
8	Non-riparian	***Yes***	***Relict bore/exit holes, no presence observed***	Indirect
9	Non-riparian	***Yes***	No presence observed	Indirect
10	Non-riparian	***Yes***	No presence observed	Indirect
11	Non-riparian	***Yes***	No presence observed	Indirect
12	Non-riparian	***Yes***	***Relict bore/exit holes, no presence observed***	Direct
13	Non-riparian	***Yes***	No presence observed	Direct

Notes:

[1] Anticipated Impact Type

Direct: Permanent physical damage or loss of the shrub is likely, such as from clearing and grading associated with project implemented.

Indirect: Reasonably foreseeable effect from project implementation on adjacent shrubs outside the direct disturbance footprint.

No Impact: Shrub would not be affected directly or indirectly from project actions; shrub is greater than 165 feet from any project-related disturbance.

[2] Cluster of more than one elderberry shrub in on location.

[3] Shrub in poor condition; highly degraded by cattle use. Provide little to no habitat value for valley elderberry longhorn beetle

ID = identification

Project implementation is anticipated to remove or damage (including trimming) three elderberry shrubs; one of these shrubs has evidence of prior use by a boring insect, possibly valley elderberry longhorn beetle. This action would result in the loss of potential (two shrubs) and likely occupied (one shrub) habitat for this species.

An additional five suitable elderberry shrubs are located outside of the project site, but within 165 feet of proposed ground-disturbance activities and could be indirectly affected by nearby project actions. However, one of these shrubs (ID6) is in poor condition and

likely provide little to no habitat value to valley elderberry longhorn beetle. Of the remaining four shrubs that could be indirectly affected (ID8 to ID 11), one has evidence or prior use by a boring insect, potentially valley elderberry longhorn beetle; all provide habitat value for this species. These indirect impacts could result in potentially reduced vigor to potential (three shrubs), likely occupied (one shrub), and low value (one shrub) habitat for this species.

The impact to valley elderberry longhorn beetle, or potentially occupied habitat (i.e., exit holes present) would be considered a **potentially significant** impact.

To reduce impacts to valley elderberry longhorn beetle and its habitat to less than significant, the following Mitigation Measure BR-1h shall be implemented as part of the project.

Mitigation Measures

BR-1h: Avoid, Minimize, and Mitigate for Impacts on Valley Elderberry Longhorn Beetle and Their Habitat

- Conduct a preconstruction survey for valley elderberry longhorn beetle consistent with the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus)* (USFWS 2017), or more current conservation guidelines, to confirm and update the location of elderberry shrubs and occupancy by this species and to assess final project impacts. At of the time of publication of this document, a total of eight elderberry shrubs were located in the project site or within 165 feet of the project site (see Figure 9 of Appendix BR-1).
- Direct impacts to individual elderberry shrubs (i.e., within 20 feet or less of project ground disturbance) shall be mitigated through transplanting the shrub(s) and providing compensation at a 1:1 ratio in accordance with the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus)* (USFWS 2017), or more current conservation guidelines.
- Indirect impacts to individual elderberry shrubs (i.e., plants between 20 to 165 feet of project ground disturbance) shall be avoided by project-activities and are subject to the implementation of the following additional measures:
    - *Avoidance and Fencing*. Project activities that may damage or kill an elderberry plant (e.g., trenching, paving, etc.) shall be avoided to the extent feasible. If avoidance of all plants is not feasible, impacts to plants shall be compensated through planting of elderberry plants in areas not subject to project disturbance at a ratio of 1:1. All areas to be avoided during construction activities shall be fenced and/or flagged as close to the project solar development area as feasible. Temporary construction fencing and flagging shall be installed at least 165 feet outside the edge of the driplines of the elderberry plants. Environmentally sensitive area signs shall be erected along the edge of the avoidance area. In areas where

encroachment on the 165-foot buffer has been approved by USFWS, a minimum setback of at least 20 feet from the dripline of each elderberry plant shall be provided, as well as documentation of USFWS setback approval.

- *Timing*. All project-related activities that could occur within 165 feet of an elderberry plant shall be conducted outside of the flight season of the valley elderberry longhorn beetle (i.e., March through July) to the maximum extent feasible.
- *Trimming*. If necessary, trimming may remove or destroy valley elderberry longhorn beetle eggs and/or larvae and may reduce the health and vigor of the elderberry plant. Therefore, to avoid and minimize direct impacts to valley elderberry longhorn beetle, trimming shall occur between November and February and shall avoid the removal of any branches or stems that are greater than 1 inch in diameter. Measures to address regular and/or large-scale maintenance (trimming) shall be established and approved by USFWS.
- *Mowing*. Mechanical weed removal within the dripline of any elderberry plant shall be limited to the season when adult valley elderberry longhorn beetles are not active (i.e., August through February) and shall avoid damage to the elderberry plant.
- *Construction Monitoring*. A qualified biologist shall monitor the project site if work would occur within the 165-foot avoidance buffer to ensure that all avoidance and minimization measures are implemented, as applicable. The amount and duration of monitoring shall depend on the project specifics and shall be discussed with USFWS.

- A qualified biologist shall provide training for all contractors, work crews, and any on-site personnel on the status of the valley elderberry longhorn beetle, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for not complying with these requirements. This species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.

SPECIAL-STATUS AQUATIC INVERTEBRATES

Vernal pool tadpole shrimp has been documented within the project site, and vernal pool fairy shrimp and midvalley fairy shrimp have been documented within five miles of the project site. Project protocol-level surveys (dry and wet season) for large-listed branchiopods resulted in no detections of these species (Appendix BR-1). Negative survey findings do not confirm species absence, but supports the conclusion that these species have low potential for occurrence on-site.

Approximately 5.92 acres of vernal pool and other seasonally inundated habitats that provide suitable habitat for these species is present within the project site. Refer to the impact discussion under Impact BR-3 below for a description of potential permanent, temporary, and indirect impacts to potentially suitable habitat for these species (i.e.,

wetlands/other waters). However, implementation of the Aquatic Resources Mitigation Plan required as part of Mitigation Measure BR-3 (see "Impact BR-3," below), would compensate for the potential loss of aquatic habitats that could support these species, if they cannot be avoided.

Any impact to vernal pool fairy shrimp, vernal pool tadpole shrimp, midvalley fairy shrimp, or their potential habitats would be considered a **potentially significant** impact. To reduce impacts to these species to be less than significant, the following Mitigation Measure BR-1i shall be implemented as part of the project.

MITIGATION MEASURES

BR-1i: Avoid, Minimize, and Mitigate for Impacts on Vernal Pool Fairy Shrimp, Vernal Pool Tadpole Shrimp, or Midvalley Fairy Shrimp

- Unless a smaller buffer is approved through formal consultation with USFWS, construction fencing shall be installed a minimum of 250 feet from the delineated wetland edge of any potentially suitable aquatic habitats (e.g., vernal pools, seasonal wetlands) for vernal pool fairy shrimp and vernal pool tadpole shrimp. All construction and operations activities are prohibited within this buffer area. If total avoidance is achieved, no further action is required.
- If avoidance, as described above, is not feasible, implement Mitigation Measure BR-3, Avoid, Minimize, and Mitigate for Impacts on State and Federally Protected Wetlands to achieve the performance standard of no net loss of State and Federally Protected Wetlands, including vernal pool habitat acreage, function, and values for vernal pool fairy shrimp, vernal pool tadpole shrimp, and midvalley fairy shrimp. Direct and indirect effects to onsite suitable aquatic habitats that may support federally listed vernal pool branchiopods shall be offset through onsite preservation and/or the purchase of tadpole shrimp and fairy shrimp species preservation credits from a USFWS-approved in-lieu fee program or other USFWS-approved conservation or mitigation bank. These effects and compensation will be quantified in the Aquatic Resources Mitigation Plan provided by the project applicant. The mitigation ratios shall, at minimum, comply with applicable mitigation ratios in terms and conditions of biological opinion issued by U.S. Fish and Wildlife Service pursuant to section 7 of the Endangered Species Act.
- These species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.

AMERICAN BADGER

American badger has not been documented within the project site, but one collapsed burrow with badger sign (i.e., characteristic claw marks along both sides of entrance) was documented in the northern portion of the project site during reconnaissance surveys (Appendix BR-1).

Project development could impact this species if the species is denning in or near the construction footprint during ground disturbance. If the species is present on the project site, impacts could include a loss of occupied habitat (i.e., annual grassland) as shown in Table BR-5, destruction of potentially active and/or occupied burrows, injury/mortality of individual badger, and/or harassment from adjacent construction that agitates denning badger.

Potential injury to or mortality of American badger (including loss of an occupied den) would be considered a **potentially significant** impact. To reduce impacts to American badger to less than significant, the following Mitigation Measure BR-1j shall be implemented as part of the project.

MITIGATION MEASURES

BR-1j: Avoid, Minimize, and Mitigate for Impacts on American Badger

- A qualified biologist shall conduct focused surveys for American badger dens within two weeks prior to ground-disturbing activities in suitable habitat (i.e., undeveloped grassland) within the project site. The survey shall cover the limits of ground disturbance and a 100-foot buffer. Any potentially active American badger dens located during the survey that show signs of recent activity shall be evaluated (typically with remote cameras) to determine activity status.
- If an active American badger den is detected during the breeding season (typically from March through May), then prior to construction, the qualified biologist shall establish a 100-foot no-disturbance buffer (e.g., staking, flagging, or similar measures) around the den. The buffer shall be maintained until the qualified biologist determines that the den is no longer active, and the young are no longer dependent upon the den for survival. If a natal den site cannot be avoided throughout the life of the project (including operations and maintenance), destruction of the natal den burrow shall only proceed after the natal den is no longer active and no badger are present within the burrow.
- If construction occurs during the non-breeding period (i.e., typically from June through February) and an active non-natal den is found in or immediately adjacent to the construction footprint, a qualified biologist shall attempt to trap or flush the individual (e.g., passive exclusion with one-way doors) and relocate it to suitable habitat away from construction. After exclusion/relocation is completed, the vacated or unoccupied den can be excavated, and construction can proceed.
- This species shall be included in the WEAP included as BMP-8 under Mitigation Measure BR-1a.

BATS

Bat roosting habitat within the project site, including for western red bat, is limited to isolated trees (and snags) near seasonal ponds or other aquatic habitat (see Table BR-1 and Plate BR-1) that provide nearby foraging opportunities, and buildings associated with

the existing farmstead (e.g., barns). No active bat roosts or signs of occupation, such as guano or staining, were detected during the reconnaissance-level field surveys.

If bat maternity roosts or winter hibernacula are located in or adjacent to the project site, impacts could result from the permanent removal of roosting sites, such as trees/snags or barns, or from project-related noise or vibrations in proximity to an occupied roosting site that results in roost abandonment and potential bat mortality. In addition, solar panels can pose a risk of bat collisions into solar panels that may result in injury or mortality (Kagan et al. 2014).

Bats are protected by the State under CFGC Section 4150 for non-game mammals (including bats). The removal of a maternity roost or winter hibernaculum or the harm or mortality of bats as a result of project implementation would be considered a violation of the take provisions of Section 4150 of the CFGC and would be considered a **potentially significant** impact.

To reduce impacts to bats to be less than significant, the following Mitigation Measure BR-1k shall be implemented as part of the project.

Mitigation Measures

BR-1k: Avoid, Minimize, and Mitigate for Impacts on Bats

- A qualified biologist shall conduct a preconstruction habitat assessment for communally roosting bats within the project site and a 300-foot buffer to the project site no less than 30 days prior to the start of construction. The habitat assessment should include a visual inspection of potential roosting features (e.g., buildings, hollows in trees), including looking for the presence of guano. If potential maternity roosts or winter hibernacula are found, their locations shall be mapped and the project shall avoid all areas within a 300-foot buffer around the potential roost sites until an Avian and Bat Protection Plan (ABBP) is prepared and approved by CDFW and USFWS (see below). The non-disturbance buffer shall remain in place during the maternity and winter hibernation seasons (May 1 through August 15, and November 1 through March 31) or until bats have vacated the roost, unless otherwise authorized by CDFW and USFWS.
- If known or potential communal bat roosts (maternity or hibernacula) are identified within the project site or 300-foot buffer prior to project construction, an ABPP shall be prepared and implemented in coordination with CDFW and USFWS to reduce/eliminate impacts to bat and avian species during construction, operations, and maintenance. The ABPP shall include the following elements:
  - A description of conditions for bird and bat species present in and near the project site, including results of site-specific surveys.
  - An assessment of potential risks of project construction, operation, and maintenance on birds and bats based on the proposed activities.

  - Conservation measures that shall be employed to avoid, minimize, and/or mitigate potential adverse effects to these species.
  - A description of the avian and bat mortality monitoring and reporting that shall take place during project operation.
  - Remedial actions and an adaptive management process that shall be used to address potential adverse effects on avian and bat species.
- A discussion of bats and potential impacts on bat roosts shall be included in the WEAP described in BMP-8 under Mitigation Measure BR-1a.

OTHER NESTING RAPTORS AND MIGRATORY BIRDS (INCLUDING NORTHERN HARRIER, LOGGERHEAD SHRIKE, WHITE-TAILED KITE, AND GRASSHOPPER SPARROW)

Potential nesting habitat for migratory bird species within the project site is generally limited to that for ground-nesting species, such as northern harrier and grasshopper sparrow. Bald eagles and white-tailed kites were observed within the project site and adjacent areas, but nesting habitat for these species, and other large soaring raptors, is not present in the project site.

Project development would remove vegetation in amounts shown in Table BR-5, and isolated trees (see Table BR-2), which has the potential to impact nesting birds protected by the federal Migratory Bird Treaty Act and CFGC. Direct construction-related impacts on nesting birds include destruction of nests or eggs from vegetation trimming, tree removal, and grading. Indirect impacts on nesting birds, including special-status species, include visual or auditory disturbance from construction noise and human presence. These types of disturbance could result in nest abandonment or failure by deterring birds from preferred nest and foraging sites, and/or distracting adults from tending to their eggs or young. Direct and indirect impacts on nesting birds, including special-status species, on and near the project site during construction could result in nest destruction, abandonment, and failure. Solar panels and associated infrastructure can pose a risk of collisions and electrocutions. Birds flying into solar panels may result in injury or mortality (Kagan et al. 2014). Solar panels may also create a risk of bird stranding (i.e., a water bird landing on a panel may not be able to fly off since they require a running start on the water's surface). Electric lines present a potential electrocution and collision hazard, particularly for large raptors (Huso et al. 2016). However, the implementation of APLIC guidelines for electrical infrastructure (see Mitigation Measure BR-1f [Swainson's Hawk]) and development of the ABPP (see Mitigation Measure BR-1k [Bats]) would reduce these potential impacts.

The loss of potential foraging habitat for grassland-associated birds could potentially contribute to a local reduction in nesting success. However, compliance with the County of Sacramento Swainson's Hawk Mitigation Program (see Mitigation Measure BR-1f [Swainson's Hawk]) would reduce these potential impacts because grassland habitats supporting these species would be preserved elsewhere in the County to mitigate for Swainson's Hawk foraging habitat impacts.

The potential loss of an active nest site for any migratory bird covered under the Migratory Bird Treaty Act would be a violation of the provisions of the Migratory Bird Treaty Act and would be considered a **potentially significant** impact. To reduce impacts to nesting birds to be less than significant, the following Mitigation Measure BR-1l shall be implemented as part of the project.

Mitigation Measures

BR-1l: Avoid, Minimize, and Mitigate for Impacts on Nesting Raptors and Migratory Birds

- Vegetation or tree removal shall be restricted to the period of September 1 through January 31, to avoid the bird nesting season. If any vegetation or trees are to be removed during the nesting season (February 1 through August 31), preconstruction nesting bird surveys shall be conducted by a qualified biologist, as described below, and such vegetation or tree removal shall only be conducted if no nesting migratory birds are found or if removal is delayed until the nest site is no longer active, as determined by a qualified biologist.
- A qualified biologist shall conduct a survey for nesting birds within one week prior to vegetation/tree removal or ground-disturbing activities during the nesting season within suitable habitat (i.e., February 1 through August 31). The survey shall cover the limits of construction and accessible suitable nesting habitat within 300 feet (and up to 0.25 mile for some raptors). If vegetation removal activities are delayed, additional nest surveys shall be conducted such that no more than seven days elapse between the survey and vegetation removal activities.
- If any active nests are observed during surveys, a qualified biologist shall establish a suitable avoidance buffer from the active nest. The buffer distance shall typically range from 50 to 300 feet (or more for some raptors) and shall be determined based on factors such as the species of bird, topographic features, intensity and extent of the disturbance, timing relative to the nesting cycle, and anticipated ground disturbance schedule. Limits of construction to avoid active nests shall be established in the field with flagging, fencing, or other appropriate barriers and shall be maintained until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist.
- If an active nest is identified in or adjacent to the construction zone after construction has started, work in the vicinity of the nest shall be suspended as needed until the project biologist can provide appropriate avoidance and minimization measures to ensure that the nest is not disturbed by construction. Appropriate measures may include a no-disturbance buffer until the nest has fledged and/or full-time monitoring by a qualified biologist during construction activities conducted near the nest.
- The ABPP described under Mitigation Measure BR-1k (Bats) shall be implemented to reduce/eliminate impacts to avian species during construction, operations, and maintenance. The ABPP shall include a discussion of the collection system which shall conform with the most current edition of the Avian

Power Line Interaction Committee guidelines to prevent electrocutions, found at: https://www.aplic.org/mission

- Protection measures for nesting raptors and migratory birds shall be included in the WEAP described in BMP-8 under Mitigation Measure BR-1a.

CROTCH'S BUMBLE BEE

While several plant species that could provide suitable nectar and pollen sources for Crotch's bumble bee are present within the project site, this species was not observed in the project site during a focused habitat survey of burrows and nectar resources conducted in Spring 2023 and no occurrences have been documented within five miles of the project site. This species has low potential to occur in the project site; however, it is unknown whether the species could occupy the site before project implementation.

Ground disturbing construction of the project could destroy nesting colonies or overwintering queens, if present in rodent burrows or in other ground surface features. Permanent loss of grassland vegetation from the project site could reduce available floral food resources for this species in the project site or vicinity; however, implementation of mitigation measure AL-1 (Agricultural Management Plan) would incorporate pollinator plants into the seed mix that could benefit this species.

The potential destruction of nests sites or queen overwintering sites would be considered a **potentially significant** impact.

To reduce impacts to Crotch's bumble bee to less than significant, Mitigation Measure BR-1m (Avoid, Minimize, and Mitigate for Impacts on Crotch's bumble bee) shall be implemented as part of the project.

MITIGATION MEASURES

BR-1m: Avoid, Minimize, and Mitigate for Impacts on Crotch's Bumble Bee.

- Implement Mitigation Measure AL-1 (see Chapter 4, "Agricultural Resources and Land Use").
- Prior to construction, a qualified biologist shall conduct focused surveys for Crotch's bumble bee in potential habitat within the project site during the Crotch's bumble bee worker flight period (March-September, peak in July). During the surveys, the qualified biologist shall flag inactive small mammal burrows and other potential nest or overwintering sites. If Crotch's bumble bee is detected, a site-specific Crotch's Bumble Bee Avoidance and Minimization Plan shall be prepared in coordination with CDFW and implemented. The Plan shall include a description of onsite habitat, potential nest and overwintering sites present, recommendations for avoidance and minimization (such as unoccupied burrow avoidance buffers), potential identification of methods to evaluate potential nest sites for use (e.g., burrow scoping or emergence surveys), and compensatory mitigation for the loss of potential nest sites, such as incorporation of appropriate native flower resources into the Agricultural

Management Plan that would support this species throughout the flight period and promote development of queens (i.e., perennial plants) and reducing use of harmful pesticides. All the measures included in the approved plan shall be implemented during project activities.

Significance after Mitigation

In summary, for the reasons listed below, Mitigation Measures BR-1a through BR-1m would reduce potential project-related direct and indirect impacts on any species identified as a candidate, sensitive, or special-status. As a result, the impact would be reduced to **less than significant with mitigation**.

- construction BMPs and AMMs (e.g., speed limits, covering trenches or installing escape ramps, etc.) would reduce the potential for harm and harassment to individuals by managing the construction site to minimize encounters with and reduce site hazards to special-status species, as well as minimize impacts to habitat by controlling work area limits with fencing and restoring/revegetating temporary disturbance areas;
- a WEAP training of onsite personnel would increase awareness and recognition of sensitive biological resources on site and requirements related to their protection;
- APLIC standards of design for project-proposed electrical infrastructure would serve to avoid and minimize potential for avian collisions and electrocutions;
- preconstruction surveys would identify locations of special-status species within or adjacent to the project site;
- species-specific avoidance buffers would help ensure protection of individuals, nesting/denning sites and vulnerable young;
- various species-specific work windows would be applied to avoid active periods for certain special-status species that may be subject to greater potential for harm or harassment;
- construction monitoring would be provided by a qualified biologist under certain circumstances and in suitable habitat, such as for California tiger salamander, western spadefoot, valley elderberry longhorn beetle, and nesting birds to ensure no unauthorized impacts;
- compensation for the permanent loss of Swainson's hawk foraging habitat would be consistent with the County of Sacramento Swainson's Hawk Mitigation Program;
- an ABPP would be developed in coordination with resource agencies to reduce risk of injury and mortality of birds and bats from project construction, operation and maintenance, including remedial and adaptive management actions; and
- species-specific avoidance, minimization, mitigation and management plans would restore onsite habitats and compensate for unavoidable impacts on special-status species habitat, developed in coordination with appropriate resource agencies and that include specific performance standards of success.

IMPACT BR-2: HAVE A SUBSTANTIAL ADVERSE EFFECT ON ANY RIPARIAN HABITAT OR OTHER SENSITIVE NATURAL COMMUNITY IDENTIFIED IN LOCAL OR REGIONAL PLANS, POLICIES, OR REGULATIONS, OR BY CDFW OR USFWS

The following sensitive natural communities are present in the project site: vernal pools that resemble Northern hardpan vernal pool habitat; grassland bird habitat; and potentially jurisdictional waters of the U.S. and of the State. Riparian habitat and EFH (Central Valley steelhead/Chinook salmon) are not present within project site, but are found more than 150 feet north-northwest of the project site. No designated critical habitat is located within the project site; the nearest is located approximately 1.5 miles southeast of the project site.

As described under Impact BR-3 below, vernal pools would be permanently impacted by the project, as would other protected wetlands up to the maximum potential amounts identified in Table BR-5.

As described under Impact BR-1 for Swainson's hawk, project development would result in the permanent loss of, and temporary disturbances to, annual grassland that could support regionally-important grassland bird species (see Table BR-5). However, temporary disturbances to annual grasslands would be restored upon completion of project construction as a result of required implementation of the Agricultural Management Plan (see Mitigation Measure AL-1 in Chapter 4, "Agricultural Resources and Land Use"). Indirect impacts that degrade adjacent grassland could also result from stormwater runoff, fugitive dust or pollution, or changes in hydrology from site development.

Riparian habitat and EFH are located more than 200 feet from the project site and would not be affected by project implementation; standard construction BMPs required by Mitigation BR-1a would be implemented to avoid and minimize off-site, project-related impacts.

The impact on sensitive natural communities from project development would be **potentially significant.** To reduce impacts on sensitive natural communities to less than significant, the following mitigation measures shall be implemented as part of the project.

MITIGATION MEASURES

Implement Mitigation Measure BR-1a (Construction BMPs).

Implement Mitigation Measure BR-1f (Swainson's Hawk).

Implement Mitigation Measure BR-3 (State or Federally Protected Wetlands).

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measures BR-1a (Construction BMPs), BR-1f (Swainson's Hawk), and BR-3 (State or Federally Protected Wetlands) would reduce potential project-

related impacts on sensitive natural communities to a **less-than-significant** level because implementation of construction BMPs, compensation for loss of Swainson's hawk foraging habitat consistent with the County of Sacramento Swainson's Hawk Mitigation Program, and an Aquatic Resources Mitigation Plan would minimize loss of, restore, and maintain on-site grasslands and jurisdictional aquatic habitats through project design refinements, re-vegetation, and vegetation management; and would compensate for residual losses of grasslands and jurisdictional aquatic habitat to achieve no net loss of aquatic resource acreage, function, and values per specified performance standards of success and consistent with required project permits.

IMPACT BR-3: HAVE A SUBSTANTIAL ADVERSE EFFECT ON STATE OR FEDERALLY PROTECTED WETLANDS (INCLUDING, BUT NOT LIMITED TO, MARSH, VERNAL POOL, COASTAL) THROUGH DIRECT REMOVAL, FILLING, HYDROLOGICAL INTERRUPTION, OR OTHER MEANS

Approximately 5.92 acres of aquatic resources are present in the 380-acre project site (see Table BR-1). Because jurisdiction has not been verified by the appropriate regulatory agencies, all aquatic features within the project site are considered to be potentially jurisdictional wetlands and other waters of the U.S. and waters (including wetlands) of the State.

Project development could result in the permanent and temporary loss of potentially jurisdictional wetlands and other waters of the U.S. and of the State in the amounts shown in Table BR-5, and summarized in Table BR-7.

Permanent impacts would result from the permanent modification of protected wetlands (and other waters) such as from either the direct filling of wetlands/waters or destruction of the duripan. Construction of project-related new access roads would result in the permanent filling of a small area along an ephemeral drainage. The proposed battery energy storage and POI/substation are currently sited outside of protected wetlands (and other waters). Construction of solar array field infrastructure, such as solar panel supports, would also result in the permanent filling of wetlands (and other waters). However, because a detailed site design for the solar array field was not available at the time of preparation of this analysis, it has been conservatively assumed that direct permanent impacts could occur to all wetlands (or other waters) mapped within the entirety of the solar array field and any other areas within the proposed facility fenceline, except temporary construction yards (Plate BR-5). While the final impact acreages would ultimately be determined during the project permitting process, the total maximum potential permanent impacts on wetlands (and other waters) resulting from the proposed project are identified in Table BR-5 and summarized in Table BR-7.

Temporary impacts on protected wetlands (and other waters) could result from use of temporary construction yards, if these areas are not avoided during development of final project designs. These potential temporary impacts on wetlands (and other waters) are identified in Table BR-5 and summarized in Table BR-7. The maximum extent of

permanent and temporary impacts on wetlands and other waters from the proposed project are shown on Plate BR-5.

Table BR-7: Anticipated Project-Related Impacts on Potentially Jurisdictional Wetlands and Other Waters of the U.S. and of the State.

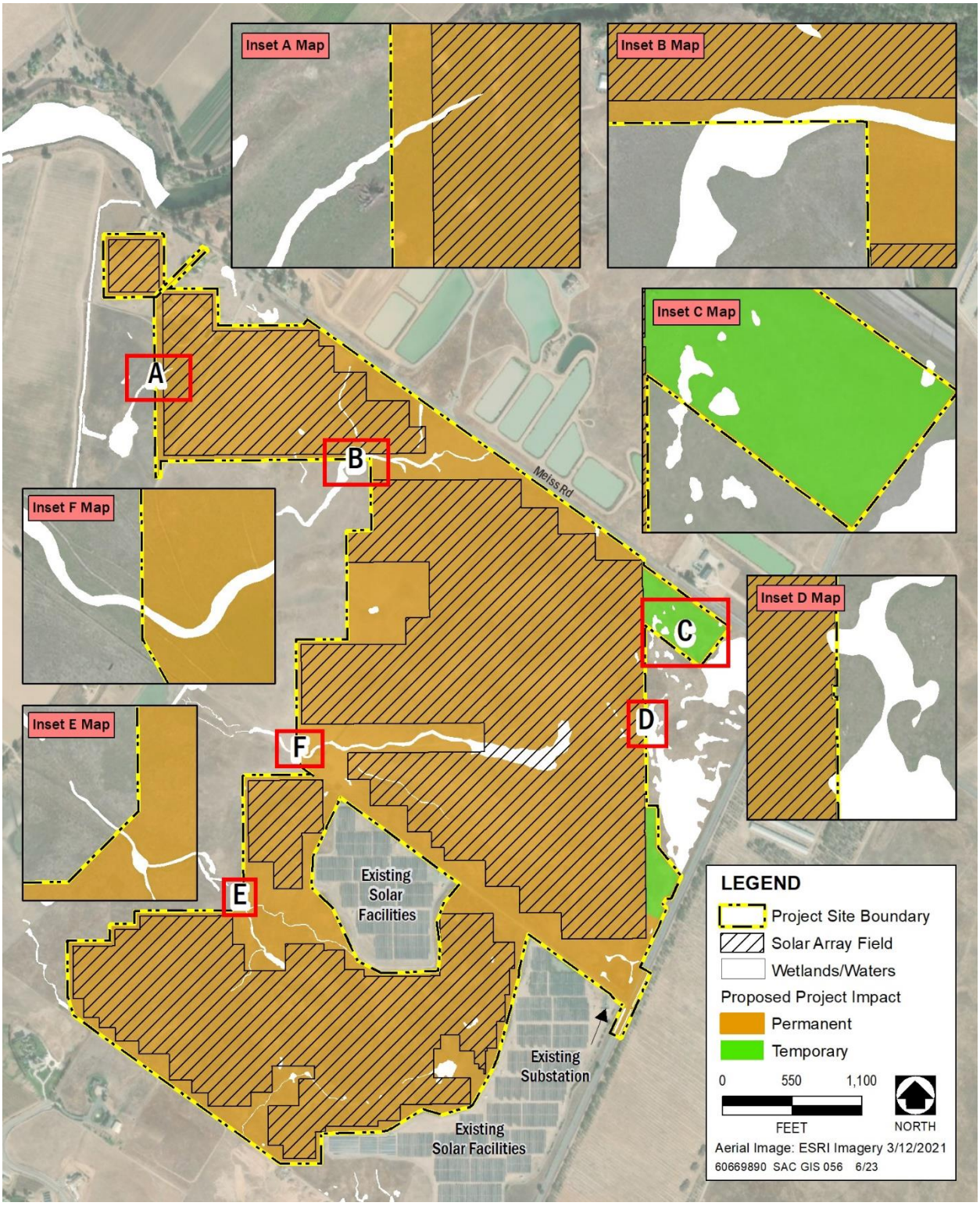
Aquatic Resource Type	Permanent[1] (Acres)	Temporary[1] (Acres)
Wetlands	4.38	0.18
Other Waters	1.31	0
Total	5.69	0.18

Notes:
[1] Impact Type:
Permanent Impacts: Acres of respective aquatic features present within the full extent of the proposed project facility fenceline, excluding temporary construction yards, and including access roads outside the fenceline.
Temporary Impacts: Acres of respective aquatic features that would be directly impacted by temporary construction activities within temporary construction yards.

If, during the permitting process, project design features are incorporated to avoid or minimize impacts on any wetlands/other waters within the facility footprint, indirect impacts on these wetlands could result from shading of wetlands (and other waters) located under and adjacent to solar panels during project operations; this could cause changes in water temperature, vegetation communities, and hydroperiod. Indirect impacts could also result to such wetlands/other waters from increases in sedimentation and runoff from adjacent construction activities, in some cases from construction activities that are within the same wetland/water feature. Indirect impacts may also result from changes in the type and amount of pollutants entering wetlands (or other waters) from implementation of the Agricultural Management Plan throughout the project site (see Mitigation Measure AL-1 in Chapter 4) which would involve a change in land use from existing cattle grazing to spring grazing and possibly mechanical treatment (e.g., mowing), potentially in the vicinity of protected wetlands (and other waters). Implementation of construction best management practices, the project stormwater pollution and prevention plan, and other permits required by existing regulations (see Chapter 9, Impact HW-3), would largely prevent sedimentation, runoff, and pollutant related impacts to off-site wetlands and other waters.

However, the potential for additional indirect edge effects (e.g., from sedimentation, runoff, etc.) remain in areas where individual wetlands/waters features span the project site boundary and permanent and/or temporary impacts are anticipated to occur up to the site boundary within those features. Areas where such additional indirect edge effects could occur are shown on Plate BR-5; however, as stated above, these additional features would likely be protected from indirect edge effects as a result of implementation of required construction best management practices, the project stormwater pollution and prevention plan, and conditions of other permits required by existing regulations (see Chapter 9, Impact HWQ-3).

Plate BR-5: Proposed Project Impacts on Wetlands/Other Waters



Sources: Dudek 2022, Compiled by AECOM 2023

Any impacts on State and federally protected wetlands would be considered a **potentially significant** impact. To reduce impacts to State and federally protected wetlands and other waters to less than significant, the following Mitigation Measure BR-3 shall be implemented as part of the project.

Mitigation Measures

BR-3: Avoid, Minimize, and Mitigate for Impacts on State and Federally Protected Wetlands and Other Waters through the Development and Implementation of an Aquatic Resources Mitigation Plan

- Prior to project implementation, project designs shall be refined within the project site boundaries (e.g., location, orientation, and shape of solar arrays) to avoid and/or minimize potential impacts on State and federally-protected wetlands and other waters and to maintain hydrological and biological connectivity through the project site without increasing impacts on other resources.
- If the final approved project does not avoid all State and federally-protected wetlands and other waters, the applicant must submit a jurisdictional delineation of waters of the U.S. and/or State prior to project implementation in support of required project permit applications for approval by USACE and subsequently all necessary permits shall be obtained for residual impacts on jurisdictional features. These typically include the following permits: CWA Section 404 Nationwide or Individual Permit, CWA Section 401 Water Quality Certification, CFGC Section 1600 Lake and Streambed Alteration Agreement, and Floodplain Encroachment Permit). All conditions of acquired permits shall be implemented to achieve the mitigation performance standards of the above-mentioned regulatory programs, including any compensatory mitigation, performance monitoring if required for on-site restoration, and reporting on the results of the monitoring to the appropriate agencies at the frequency and duration included in the permits. Concurrently, an Aquatic Resources Mitigation Plan shall be prepared and implemented that includes compensation for impacted jurisdictional resources to achieve the performance standard of no net loss of State and federally protected wetlands and other waters. The Aquatic Resources Mitigation Plan may include requirements such as:
  - Directing construction traffic along access roads until they reach active work sites to limit soil compaction and disturbance to the site.
  - Minimizing site grading and maintaining the overall pre-project site drainage patterns across the project site.
  - Restricting unavoidable temporary construction activities within wetlands/other waters (e.g., driving vehicles/equipment through jurisdictional aquatic resources) to the dry season and implementing soil compaction prevention via use of rubber mats or other similar materials to protect the soil surface from and distribute the weight of equipment/vehicles when driving over wetlands/other waters.

  - Restricting use of heavy equipment within wetlands/other waters within the permanent construction footprint to dry conditions (e.g., during dry season or so as not to form ruts of 6 inches or more) or dewatered areas.
  - Siting inverters and transformers to avoid direct loss of wetlands and other waters.
  - Delineation of the work site boundaries such that no work occurs outside the defined impact footprint of the project site.
  - Restoring all temporary impacts to wetlands to pre-existing conditions.
  - Establishing wetland avoidance buffers (e.g., typically a minimum of 50 feet although may be reduced to 10 feet in some circumstances) with flagging, staking, or other appropriate barriers.
  - Developing final project designs to maintain existing on-site drainage patterns and ensure no reduction or increase in existing surface water flow off-site into adjacent lands.
  - For all work conducted in or within 50 feet of aquatic resources, a qualified biologist shall be on-site to monitor construction activities to ensure avoidance and minimization measures are properly implemented to protect sensitive aquatic resources and that no un-authorized impacts occur.

- Compensation shall be provided for project-related residual impacts to State and federally protected wetlands and other waters to achieve a performance standard of no net loss of the acreage, function, and values of jurisdictional resources. Compensatory mitigation requirements shall apply to residual impacts on all wetland and water features, whether preliminarily identified as potentially jurisdictional or not. Potential compensation options include one or more of the following: on-site restoration, off-site preservation, or purchasing mitigation credits from an agency-approved wetlands mitigation bank (e.g., Clay Station, Bryte Ranch, Laguna Creek, and Van Vleck Ranch), paying an agency-approved in-lieu fee, and/or developing conservation lands to compensate for permanent loss of resources. Mitigation ratios are expected to be no less than 1:1 and shall be determined during the permitting process.
- Jurisdictional wetlands within and adjacent to the project site provide habitat to special-status species (e.g., California tiger salamander, western spadefoot, and large-listed branchiopods). Additional mitigation for potential direct and indirect impacts to special-status species habitat is required per Mitigation Measures BR-1c and BR-1i, and shall be included in the Aquatic Resources Mitigation Plan to achieve a no net loss of habitat acreage, function, and values at a mitigation ratio acceptable to the USFWS and CDFW for species within their respective jurisdiction and consistent with performance standards of applicable permits issued by USFWS and/or CDFW.
- Implement standard construction BMPs provided in Mitigation Measure BR-1a, in particular BMP-1 (Construction Fencing), BMP-2 (Erosion Control), BMP-3 (Equipment Storage and Fueling), BMP-5 (Dust Control), BMP-9 (Soil

Compaction), and BMP-10 (Revegetation) to protect adjacent wetlands and other waters from unauthorized encroachment and/or impacts outside the project site.

- Jurisdictional aquatic resources shall be included in the WEAP discussed as BMP-8 under Mitigation Measure BR-1a.

Significance after Mitigation

Mitigation Measure BR-3 would reduce potential project-related impacts on State or federally protected wetlands to a **less-than-significant** level because project design refinements, securing required project permits, and implementation of an Aquatic Resources Mitigation Plan including required mitigation and compensation would minimize loss of, restore, and maintain on-site jurisdictional aquatic habitats; and would compensate for residual losses of these features to achieve no net loss per specified performance standards of success and consistent with relevant required USACE and CDFW project permits.

Impact BR-4: 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

Undeveloped grassland and associated seasonal wetland habitats in the project site provide nursery (e.g., nest sites) and migratory habitat for common wildlife species. The Cosumnes River ranges from approximately 150 feet in the northwest corner of the project site, to more than 0.5 mile in the southwest corner. The Consumnes River is an important riparian connection, providing native habitat for resident wildlife, as well as linkages to additional native habitat in the region.

Proposed fencing around the project site may limit wildlife permeability in the grasslands for medium to large-sized animals (e.g., coyote). However, the project was designed to focus development in the lowest habitat value areas within the project study area and would avoid the higher habitat values areas including the Cosumnes River Corridor. The study area would retain much of its connectivity value for bird species and common mammal species (e.g., coyote) that are known to currently move across these lands. In addition, smaller and more mobile species such as birds, amphibians and reptiles, and deer would be able to pass through or over the proposed fencing and movements through the project site are not likely to be impeded. Furthermore, as a result of implementation of the Agricultural Management Plan (Mitigation Measure AL-1) annual grasslands would be retained and restored as a ground-cover matrix throughout the majority of the project site (e.g., beneath solar panels, between rows of panels, and outside solar array fields and permanent facility footprints). These areas of grassland that would remain available would be expected to retain some habitat connectivity throughout the project site. In addition, mitigation measures required for project-related impacts on burrowing owl, Swainson's hawk, and State or federally protected wetlands (and other waters) (Mitigation Measures BR-1e, BR-1f, and BR-3) would require compensation that would minimize

local and regional habitat losses and maintain habitat for connectivity within the project site's local and regional context.

Furthermore, the project has been initially designed to avoid development in areas closest to the Cosumnes River and focus development in areas of lower quality as movement corridors farther south and adjacent to an existing solar development. As a result, project development would not impact the riparian corridor along the Cosumnes River, which likely provides the most important local and regional habitat connections in the vicinity of the project site and nursery sites for aquatic, riparian, and terrestrial species, including egret and heron rookeries. Therefore, the functions along the identified Cosumnes River/Deer Creek Wildlife Movement Corridor would be maintained with project implementation.

The potential impact of project development on wildlife movement and access to nursery sites would be considered a **potentially significant** impact, without implementation of Mitigation Measures BR-1e, BR-1f, and BR-3. To reduce impacts on sensitive natural communities to less than significant, the following mitigation measure shall be implemented as part of the project.

Mitigation Measures

Implement Mitigation Measure AL-1 (see Chapter 4, "Agricultural Resources and Land Use")

Implement Mitigation Measure BR-1e (Burrowing Owl).

Implement Mitigation Measure BR-1f (Swainson's Hawk).

Implement Mitigation Measure BR-3 (State or Federally Protected Wetlands).

Significance after Mitigation

Implementation of Mitigation Measures AL-1 (Agricultural Management Plan), BR-1e (Burrowing Owl), BR-1f (Swainson's Hawk), and BR-3 (State or Federally Protected Wetlands) would reduce potential project-related impacts on wildlife movement to a **less-than-significant** level because implementation of the Agriculture Management Plan would retain and/or restore grassland vegetation throughout much of the project site that could facilitate wildlife movement across the project site, and because compensation for loss of Burrowing owl habitat, Swainson's hawk foraging habitat, and protected wetlands (and other waters) would protect and retain habitat regionally that would support regionwide wildlife connectivity.

IMPACT BR-5: CONFLICT WITH ANY LOCAL POLICIES OR ORDINANCES PROTECTING BIOLOGICAL RESOURCES, SUCH AS A TREE PRESERVATION POLICY OR ORDINANCE

The Sacramento County Swainson's Hawk Ordinance (Sacramento County Code Chapter 16.130) and General Plan Policy CO-138 (Landmark and Heritage Tree Protection) are applicable to the proposed project.

Implementation of Mitigation Measures AL-1 (Agricultural Management Plan), BR-1e (Burrowing Owl), BR-1f (Swainson's Hawk), and BR-3 (State or Federally Protected Wetlands) would reduce potential project-related impacts on wildlife movements, wildlife corridors, and access to nursery sites to a **less-than-significant**

The Swainson's Hawk Ordinance established the Swainson's Hawk Mitigation Program to provide additional means of mitigation for loss of Swainson's hawk foraging habitat for projects within the County that are within 10 miles of a Swainson's hawk nest. Projects impacting more than 40 acres of foraging habitat must provide direct preservation of mitigation land (i.e., fee title or easement) on a per-acre basis that is acceptable to CDFW and the County.

The project site is within five miles of more than 15 known nest records for Swainson's hawk; approximately 361.49 acres of annual grassland occur within the project site and could provide potential foraging habitat to Swainson's hawks in the region, of which approximately 353.02 acres would be permanently impacted by the proposed project. Implementation of the project with required Mitigation Measure BR-1f would ensure that the project is consistent with the Sacramento County Swainson's Hawk Ordinance.

When development requires removal of native oaks, replacement mitigation is required pursuant to County policy. The Conservation Element also requires the preservation of landmark trees, as well as non-oak natives, such as California black walnuts and California sycamores, wherever possible. Based on the tree inventory completed for the project (Appendix BR-3), protected tree species are primarily located adjacent to the riparian corridor along the Cosumnes River approximately 200 feet north of the project site. A total of 15 trees (see Table BR-2) are located within the project site and may be directly impacted by project activities, none of which are protected. One of the 15 trees is a native oak; however, it is not considered protected by Sacramento County General Plan Policies because it is dead. Only one County General Plan protected tree, a Valley oak, was identified during the complete inventory of the project study area and is located approximately 200 feet outside of the project site. No trees that would be affected by the project would require protection, preservation, or replacement in-kind per Sacramento County General Plan Policies. Therefore, the proposed project is not anticipated to conflict with the Sacramento County General Plan Policies.

The potential for project development to conflict with the County Swainson's Hawk Ordinance protecting biological resources would be considered a **potentially significant** impact without implementation of Mitigation Measure BR-1f. To reduce the potential

impact on local ordinances to less than significant, the following mitigation measure shall be implemented as part of the project.

Mitigation Measures

Implement Mitigation Measure BR-1f (Swainson's Hawk).

Significance after Mitigation

The implementation of mitigation Measure BR-1f (Swainson's Hawk) would reduce potential project-related conflict with the local Swainson's Hawk Ordinance to a **less-than-significant** level because compensation for the loss of Swainson's hawk foraging habitat would be accomplished using the County of Sacramento Swainson's Hawk Mitigation Program or through approved, alternative means at a level that is consistent with the mitigation standard established by the County's Swainson's Hawk Mitigation Program.

Impact BR-6: Conflict with the Provisions of an Adopted HCP, Natural Community Conservation Plan, or other approved Local, Regional, or State HCP

The project site is located within the SSHCP Plan Area, but outside the SSHCP defined UDA. Only limited development activities (i.e., infrastructure) are covered by the SSHCP in areas outside the UDA, not including solar development such as for the proposed project. The vast majority of species habitat preservation that would be accomplished under the SSHCP conservation strategy is planned for areas outside the UDA. While the SSHCP does not preclude the development of non-Covered Activities within the SSCHP Plan Area, non-Covered Activities, especially those outside the UDA, have potential to be inconsistent with the SSHCP, including limiting the availability of lands for accomplishing species habitat preservation under the SSHCP. Therefore, an analysis of project consistency with the SSCHP is provided below.

The proposed project would implement BMPs during construction (see Mitigation Measure BR-1a) that are consistent with those described in the SSHCP and species-specific mitigation measures (see Mitigation Measures BR-1b through BR-1l) that also are consistent with AMMs for Covered Species described in the SSHCP. The project would also be consistent with the conservation strategy in the SSHCP and would not interfere with establishment of an integrated preserve system. This conclusion is based, in part, on Dudek's detailed analysis of project consistency with the SSHCP (Appendix BR-5).

Dudek's analysis demonstrates that project-required compensation would supplement and bolster the function of the SSHCP preserve system and would not preclude the plan permittees from meeting the obligations of the SSHCP preserve system for the following reasons:

- While lands within the project site would not be available for acquisition as part of the SSHCP preserve system during the project's 35-year lifespan of the project,

the project site would continue to provide some habitat value for SSHCP Covered Species (see discussion under Impact BR-1, Burrowing Owl and Swainson's Hawk).

- The SSHCP did not envision mitigation bank credit purchases as composing a substantial portion of the preserve system; as of December 2021, the nine preserves which have been identified under the SSHCP to date have been fee title dedications or easements (i.e., no bank credit purchases) (South Sacramento Conservation Agency 2021). Project-required compensation for impacts to Swainson's hawk, burrowing owl, valley elderberry longhorn beetle, and aquatic resources and the special-status species dependent on them (e.g., vernal pool tadpole shrimp, etc.), would primarily be achieved with on-site habitat avoidance and enhancement, and/or with purchase of mitigation credits at an approved mitigation bank. The project site is within the service area for the following existing mitigation banks: Clay Station Mitigation Bank, Bryte Ranch Conservation Bank, Laguna Creek Mitigation Bank, and Van Vleck Ranch Mitigation Bank. Therefore, anticipated project compensatory credit purchases would not substantially interfere with the conservation strategy of the SSHCP.
- For a few sensitive species for which mitigation banks are not available or of limited availability, off-site preservation is included as a mitigation option for the proposed project (e.g., Mitigation Measures BR-1e [Burrowing Owl] and BR-1f [Swainson's Hawk]). However, even if it is assumed that all project-required compensation is to be accomplished via off-site preservation and that the entire extent of the project site would be permanently disturbed (i.e., removed), the project would conservatively only remove a relatively small percentage of habitat for SSHCP Covered Species (1 to 2 percent) and a smaller percentage of natural land cover types (up to 1 percent) within SSCHP PPU 5 that are available for the establishment of preserves under the SSHCP (Table BR-8 and Table BR-9). Acreages of natural land cover types and of Covered Species modeled habitat remaining available in PPU 5 after project implementation would be more than sufficient to meet the SSHCP target of 1,691 acres of preserves within PPU 5.

The SSHCP preserve design focus in PPU 5 is primarily to provide habitat linkages among preserves, mostly along and connected to the Cosumnes River/Deer Creek Corridor. Approximately 1,482 of the 1,619 total acres of preserves to be established within PPU 5 would be preserved in the Cosumnes River/Deer Creek Wildlife Movement Corridor as part of the SSHCP. As described under Impact BR-5, above, the project would not affect the Cosumnes River/Deer Creek Wildlife Movement Corridor and would therefore not interfere with the establishment of 1,482 acres of targeted preserves within this important riparian corridor.

Table BR-8: Potential Project-Related (Temporary and Permanent) Removal of Natural Land Cover Types Present within SSHCP Preserve Planning Unit 5

Land Cover Type	Estimated Project Impact (Acres)	PPU 5 Total (Acres)	Project Percent of PPU 5	PPU 5 – Remaining After Project (Acres)	PPU 5 – Preserve Target (Acres)
Terrestrial					
Annual Grassland	361	27,463	1	27,101	750
Cropland/Irrigated Pasture	0	2,462	0	2,462	388
Blue Oak Woodland/Blue Oak Savannah	0	6,556	0	6,556	0
Riparian					
Mixed Riparian Woodland/Mixed Riparian Scrub	0	1,342	0	1,342	440
Aquatic Features					
Freshwater Marsh	0	159	0	159	0
Seasonal Wetland	3	446	1	443	31
Swale	1	89	1	88	8
Vernal Pool	<1	339	0	338	35
Open Water	<1	365	0	364	6
Stream/Creek (intermittent/perennial)	<1	481	0	480	33
Stream/Creek (ephemeral)	1	0	N/A	N/A	0

Source: County of Sacramento et al. 2018, adapted by AECOM in 2022.
PPU = Preserve Planning Unit
SSHCP = South Sacramento Habitat Conservation Plan

The approximately 137 acres of remaining SSHCP preserves that would be established in PPU 5 would connect the Cosumnes River/Deer Creek Corridor to areas to its north, Linkage Preserve L-6 (not affected by the project), and to the large Landscape Preserve to the southeast in PPU 7 (Linkage Preserve L-11) (see Plate BR-3). Linkage Preserve L-11 overlaps the vicinity of the project site, the majority of which would preserve grasslands, but may also include substantial areas of cropland and seasonal wetlands. As described in this impact analysis above, while lands within the project site would not be available to achieve establishment of Linkage Preserve L-11 under the SSHCP, there are sufficient grasslands and seasonal wetlands available in the vicinity to fulfill this need for the SSHCP. Furthermore, the project site would retain some habitat value that would contribute to habitat connectivity between the Cosumnes River corridor and areas to the southeast.

Table BR-9: Potential Project-Related Removal of Covered Species Modeled Habitat Present within SSHCP PPU 5

Land Cover Type	Proposed Project Site (Acres)	PPU 5 Total (Acres)	Project Percent of PPU 5
California tiger salamander (Upland)	356	15,131	2
California tiger salamander (Aquatic)	4	632	1
Western spadefoot (Upland)	356	34,019	1
Western spadefoot (Aquatic)	5	1,720	<1
Northwestern pond turtle (Upland)	46	29,256	1
Northwestern pond turtle (Aquatic)	0	807	0
Burrowing owl (nesting/foraging)	362	32,907	1
Burrowing owl (foraging)	5	874	1
Swainson's hawk (nesting)	0	1,342	0
Swainson's hawk (foraging)	367	32,129	1
Tricolored blackbird (nesting/foraging)	362	30,617	1
Tricolored blackbird (foraging)	5	2,996	<1
Valley elderberry longhorn beetle	0	1,401	0
Vernal pool tadpole shrimp/vernal pool fairy shrimp[1]	302	13,456	2

Source: Appendix BR-5, adapted by AECOM in 2022.
Notes:
[1] Estimated project impact and acres of habitat available in PPU 5 are likely grossly overestimated because suitable habitat modeled for this species includes all annual grassland mapped within the project site, whereas this species is restricted to seasonal aquatic habitats within annual grassland which are typically very limited.
PPU = Preserve Planning Unit
SSHCP = South Sacramento Habitat Conservation Plan

In summary, the project is consistent with provisions of the SSHCP because it includes all relevant general and Covered Species AMMs from the SSHCP as required mitigation measures in this document; because project development would not substantially affect the ability to implement the Conservation Strategy as it would allow sufficient habitat acreages to remain regionally to meet the preserve planning needs of the SSHCP; and because key linkage preserves targeted within PPU 5 would either be avoided (Cosumnes River/Deer Creek Corridor) or minimally impacted by project development. Furthermore, the project site would be decommissioned after the project's 35-year lifespan and would return to existing conditions within the 50-year permit term of the SSHCP. Therefore, the potential conflict of project development with provisions of the SSHCP would be **less than significant.**

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7 CLIMATE CHANGE

INTRODUCTION

This chapter provides background information about greenhouse gas (GHG) emissions and climate change. Emissions of GHGs have the potential to adversely affect the environment because such emissions contribute cumulatively to global climate change. Cumulative emissions from many projects and activities affect global GHG concentrations and the climate system. Unlike criteria air pollutants and toxic air contaminants that tend to have more localized or regional impacts, GHG emissions tend to disperse more broadly and are more of a global concern because of their relatively longer atmospheric lifetimes compared to air pollutant emissions. Therefore, the total amount and types of GHG emissions, regardless of their location, have the most significant effect on climate change globally.

In response to the Notice of Preparation, the Sacramento Metropolitan Air Quality Management District (SMAQMD) recommended that the analysis of GHG emissions consider the SMAQMD's CEQA Guide to Air Quality Assessment in Sacramento County (SMAQMD 2021) for the methods to analyze GHG emission impacts, including thresholds of significance, calculation methods, and mitigation measures. The SMAQMD also recommended that the environmental analysis acknowledge the project's impacts on the urban heat island effect.

ENVIRONMENTAL SETTING

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space through the atmosphere. However, infrared radiation is selectively absorbed by GHGs in the atmosphere. As a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on Earth. Anthropogenic (human-caused) emissions of GHGs lead to atmospheric levels in excess of natural ambient concentrations and have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change.

The Intergovernmental Panel on Climate Change (IPCC) concluded that variations in natural phenomena, such as solar radiation and volcanoes, produced most of the warming of the earth from pre-industrial times to 1950. Some variations in natural phenomena also had a small cooling effect. From 1950 to the present, increasing GHG

concentrations resulting from human activity, such as fossil fuel burning and deforestation, have been responsible for most of the observed temperature increase (IPCC 2021).

Global surface temperature has increased by approximately 1.96 degrees Fahrenheit (°F) over the last 140 years (IPCC 2021); the likely total human-caused global surface temperature increase is 1.93°F. The rate of increase in global average surface temperature has not been consistent; the last four decades have warmed at a much faster rate per decade (IPCC 2021).

During the same period when increased global warming has occurred, many other changes have occurred in other natural systems. Sea levels have risen; precipitation patterns throughout the world have shifted, with some areas becoming wetter and others drier; snowlines have increased elevation, resulting in changes to the snowpack, runoff, and water storage; and numerous other conditions have been observed. Although it is difficult to prove a definitive cause-and-effect relationship between global warming and other observed changes to natural systems, there is a high level of confidence in the scientific community that these changes are a direct result of increased global temperatures caused by the increased presence of GHGs in the atmosphere (IPCC 2021).

Principal Greenhouse Gases and Sources

GHGs are present in the atmosphere naturally, are released by natural and anthropogenic (human-caused) sources, and are formed from secondary reactions taking place in the atmosphere. Natural sources of GHGs include the respiration of humans, animals, and plants; decomposition of organic matter; volcanic activity; and evaporation from the oceans. Anthropogenic sources include the combustion of fossil fuels by stationary and mobile sources, waste treatment, and agricultural processes. The following are the principal GHG pollutants that contribute to climate change and their primary emission sources:

- Carbon Dioxide (CO_2): Natural sources of CO_2 include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; and evaporation from oceans. Anthropogenic (human) sources include burning of coal, oil, natural gas, and wood.
- Methane (CH_4): CH_4 is emitted during the production and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- Nitrous Oxide (N_2O): N_2O is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests.

- Fluorinated gases: These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes called High Global Warming Potential (High GWP) gases. These High GWP gases include:
    - Chlorofluorocarbons (CFCs): These GHGs are used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants.
    - Perfluorinated Chemicals (PFCs): PFCs are emitted as by-products of industrial processes and are also used in manufacturing.
    - Sulfur hexafluoride (SF_6): This is a strong GHG used primarily as an insulator in electrical transmission and distribution systems.
    - Hydrochlorofluorocarbons (HCFCs): These have been introduced as temporary replacements for CFCs and are also GHGs.
    - Hydrofluorocarbons (HFCs): These were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are GHGs emitted as by-products of industrial processes and are also used in manufacturing.

GHGs are not monitored at local air pollution monitoring stations and do not represent a direct impact to human health. Rather, GHGs generated locally contribute to global concentrations of GHGs, which result in changes to the climate and environment.

Global Warming Potential

GWP is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time the gas remains in the atmosphere (its "atmospheric lifetime"). The GWP of each gas is measured relative to CO_2. Therefore, CO_2 has a GWP of 1. GHGs with lower emissions rates than CO_2 may still contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO_2 (i.e., high GWP). For example, SF_6, while comprising a relatively small fraction of the total GHGs emitted annually worldwide, has a GWP of 22,800, meaning that 1 ton of SF_6 has the same contribution to the greenhouse effect as approximately 22,800 tons of CO_2. The concept of CO_2 equivalence (CO_2e) is used to account for the different GWP potentials of GHGs. GHG emissions are typically measured in terms of pounds or tons of CO_2e and are often expressed in metric tons (MT) CO_2e.

Climate change is a global issue because GHGs can have global effects, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern (see Chapter 5 "Air Quality"). 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), or long enough to be dispersed around the globe.

Potential Effects of Climate Change

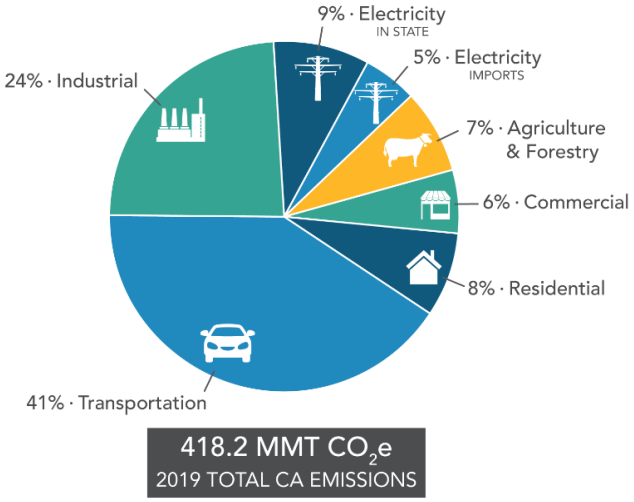
Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The IPCC's 2021 Synthesis Report indicated that warming of the climate system is unequivocal and, since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, and rising sea levels (IPCC 2021).

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. As noted in the Sacramento Valley Regional Report of the California's Fourth Climate Change Assessment, climate change is expected to make the Sacramento region hotter, drier, and increasingly prone to extremes like megadroughts, flooding, and large wildfires. These changing conditions are likely to affect water and energy availability, agricultural systems, plants and wildlife, public health, housing, and quality of life.

In Sacramento County, potential hazards (or exposures) related to climate change have also been analyzed as part of the Climate Change Vulnerability Assessment for the Sacramento County Climate Action Plan: Communitywide Greenhouse Gas Reduction and Climate Change Adaptation (Communitywide CAP) (County of Sacramento 2017a, 2022). The direct, or primary, effects of climate change analyzed for Sacramento County include: increased temperature, changes in precipitation patterns, and sea level rise. Secondary consequences, which could occur as result of one or a combination of these primary effects, are also analyzed. These include: increased frequency, intensity, and duration of extreme heat days and heat waves/events; loss of snowpack and decreased water supplies; increased wildfire; and increased flooding.

State Greenhouse Gas Emissions Inventory and Trends

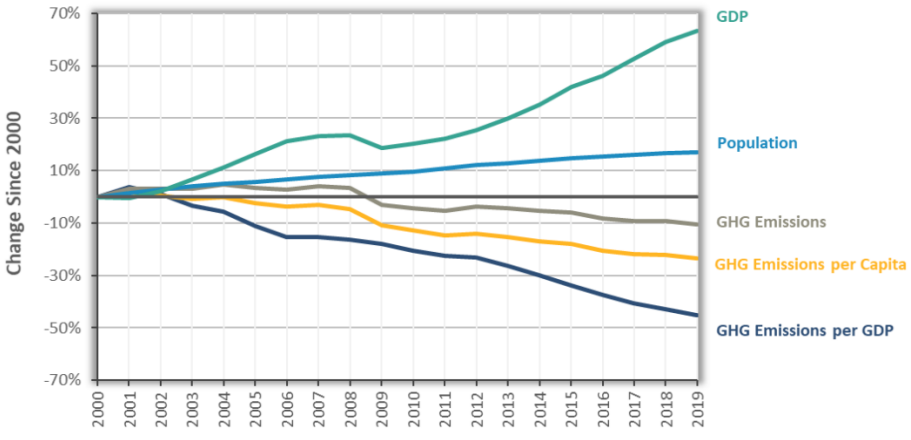
The CARB prepares an annual inventory of statewide GHG emissions. GHGs are typically analyzed by sector, a term that refers to the type of activity. As shown in Plate CC-1, 418.2 million MT CO_2e were generated in 2019. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2019, accounting for 41 percent of total GHG emissions. Transportation was followed by industry, which accounted for 24 percent, and then the electric power sector (including in-state and out-of-state sources), which accounted for 14 percent of total GHG emissions (CARB 2021a).



Source: CARB 2021a

Plate CC-1. 2019 California Greenhouse Gas Emissions Inventory by Sector

California has adopted laws and executive orders, and has implemented a large number of programs and regulatory measures to reduce GHG emissions to substantially reduce GHG emissions in accordance with the IPCC recommendations. The State's GHG regulatory program is described below. Plate CC-2 demonstrates California's progress in reducing statewide GHG emissions. Since 2007, California's GHG emissions have been declining, even as population and gross domestic product have increased. Per-capita GHG emissions in 2019 were 25 percent lower than the peak per-capita GHG emissions recorded in 2001. Similarly, GHG emissions per million dollars of gross domestic product have decreased by 47 percent since the peak in 2001.



Metric	Associated 2019 Value
GDP	2.7 Trillion (2012 $)
Population	39.8 Million
GHG Emissions	418.1 Million Tonnes CO_2e
GHG Emissions per Capita	10.5 Tonnes CO_2e per Capita
GHG Emissions per GDP	150 Tonnes CO_2e per Million $

Source: CARB 2021b

Plate CC-2. Trends in California Greenhouse Gas Emissions (Years 2000 to 2019)

Local Greenhouse Gas Emissions Inventory

As described below, under "Sacramento County Climate Action Plan," the County of Sacramento is in the process of developing the County's Climate Action Plan (CAP). The Final Draft CAP includes a baseline and forecasted GHG emissions inventory for the community and government operations. The total community GHG emissions in the 2015 baseline year were 4,723,011 MT CO_2e, while the forecasted GHG emissions for 2030 are 3,309,712 MT CO_2e (County of Sacramento 2022).

Regulatory Setting

Federal, state, regional, and local GHG-related plans, policies, and regulations are helpful for understanding the overall context for GHG emissions impacts and strategies to reduce GHG emissions.

Federal

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the federal Clean Air Act (CAA). On April 2, 2007, the U.S. Supreme Court held that the EPA must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency et al.,* 12 states and cities (including California) along with several environmental organizations sued to require EPA to regulate GHGs as pollutants under the CAA (127 S. Ct. 1438 [2007]). The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant and that EPA had the authority to regulate GHGs.

U.S. Environmental Protection Agency "Endangerment" and "Cause or Contribute" Findings

On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- *Endangerment Finding:* The current and projected concentrations of the six key GHGs—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations.
- *Cause or Contribute Finding:* The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

State

The legal framework for GHG emission reductions has come about through Executive Orders, legislation, and regulations. The major components of California's climate change initiatives are outlined below.

Executive Order S-3-05

Executive Order S-3-05, issued in recognition of California's vulnerability to the effects of climate change, set forth the following target dates by which statewide GHG emissions would be progressively reduced: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Executive Order B-55-18

Executive Order B-55-18 established a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. The Executive Order states that this new goal is in addition to the existing statewide targets of reduction GHG emissions.

Assembly Bill 32 and the State Climate Change Scoping Plan

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 further details and puts into law the mid-term GHG reduction target established in Executive Order S-3-05: reduce GHG emissions below 1990 levels by 2020. AB 32 also identifies CARB as the State agency responsible for the design and implementation of emissions limits, regulations, and other measures to meet the target.

In December 2008, CARB adopted the Climate Change Scoping Plan (Scoping Plan), which contains the main strategies California will implement to achieve the required GHG reductions required by AB 32 (CARB 2008). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of California's GHG inventory. CARB acknowledges that land use planning decisions will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors. The Scoping Plan details the regulations, alternative compliance mechanisms, voluntary actions and incentives, etc. proposed to meet the target emission reduction levels.

Executive Order B-30-15

In April 2015, Governor Edmund Brown issued an executive order establishing a statewide GHG reduction goal of 40 percent below 1990 levels by 2030. The emission reduction target acts as an interim goal between the AB 32 goal (i.e., achieve 1990 emission levels by 2020) and Governor Brown's Executive Order S-3-05 goal of reducing statewide emissions 80 percent below 1990 levels by 2050. In addition, the executive order aligns California's 2030 GHG reduction goal with the European Union's reduction target (i.e., 40 percent below 1990 levels by 2030) that was adopted in October 2014.

Senate Bill 32

Approval of SB 32 in September 2016 extended the provisions of AB 32 from 2020 to 2030 with a new target of 40 percent below 1990 levels by 2030. The companion bill, AB 197, adds two non-voting members to the CARB, creates the Joint Legislative Committee on Climate Change Policies consisting of at least three Senators and three Assembly

members, requires additional annual reporting of emissions, and requires Scoping Plan updates to include alternative compliance mechanisms for each statewide reduction measure, along with market-based compliance mechanisms and potential incentives.

Senate Bill 1078 (2002), Senate Bill 100 (2021) – California Renewables Portfolio Standard

Established in 2002 by SB 1078, California's Renewables Portfolio Standard (RPS) requires electricity providers (i.e., utilities, cooperatives, and community choice aggregators) to provide a specified minimum portion of their electricity supply from eligible renewable resources by milestone target years. Since 2002, state legislative actions have modified and accelerated the RPS several times, resulting in one of the most ambitious renewable energy standards in the country. Most recently, SB 100 increased the RPS target to require retail sellers of electricity to serve 60 percent of their electric load with renewable energy by 2030 with new interim targets of 44 percent by 2024 and 52 percent by 2027, as well as requiring that all of the state's electricity come from carbon-free resources (not only RPS-eligible ones) by 2045.

Mandatory Reporting of Greenhouse Gas Emissions (17 CCR Sections 95100 to 95158)

This rule applies to entities of certain sources categories, including suppliers of transportation fuels and generators of electricity. However, no specific reporting requirements apply to electric power generation from solar resources.

California Code of Regulations Title 17 CCR Sections 95350 et seq.

Adopted in 2010, the purpose of this regulation is to achieve GHG emissions reductions by reducing SF_6 emissions from electric power system gas-insulated switchgear. Owners of such switchgear must not exceed maximum allowable annual emissions rates, which as of 2020 and each year thereafter is 1.0 percent. Owners of such switchgear must annually report SF_6 emissions, determine the emission rate relative to the SF_6 capacity of the switchgear, provide a complete inventory of all gas-insulated switchgear and their SF_6 capacities, provide a SF_6 gas container inventory, and keep all information current for CARB enforcement staff inspection and verification. Existing and new electric transmission facilities and switchgear associated with renewable energy generation would be subject to this regulation.

In September 2020, CARB adopted Resolution 20-28, to amend the current regulation. Under this resolution, CARB developed a timeline for phasing out SF_6 equipment in California in stages between 2025 and 2033 and will be creating incentives to encourage owners to replace SF_6 equipment. The Resolution was approved by the California Office of Administrative Law and filed with the Secretary of State on December 30, 2021, and the amendments became effective January 1, 2022.

LOCAL

SACRAMENTO COUNTY CLIMATE ACTION PLAN

Sacramento County is currently in the process of developing the CAP. The Final Draft CAP was presented to the Board of Supervisors on March 23, 2022, and the Final Draft CAP was released in September 2022. The Final Draft CAP details specific measures that will be implemented in the County by 2030 to reduce GHG emissions from communitywide activities and government operations (County of Sacramento 2022). It also includes an adaptation plan that recommends actions to reduce the community's vulnerability to the anticipated impacts of climate change. The Final Draft CAP has been developed in response to mitigation measures contained in the County's General Plan, the County's adoption of a Climate Emergency Resolution in December 2020, and State legislation including Assembly Bill 32, SB 32, and SB 743 as well as Executive Orders S-3-05 and B-55-18. The strategies and measures contained in the Final Draft CAP complement a wide range of policies, plans, and programs that have been adopted by the County, State, and regional agencies to protect communities from hazards and activities contributing to GHG emissions. The Final Draft CAP includes the following strategies and elements related to renewable energy production:

EN-19. Support the development and use of renewable sources of energy, including but not limited to biomass, solar, wind, and geothermal.

PF-79. New solar and other renewable energy facilities should be designed and developed so as to minimize impacts to sensitive biological resources such as oak woodlands and vernal pools, cultural resources (including designated historic landscapes), or farmlands as defined by the California Department of Conservation. Nearby farm operations shall not be negatively affected by renewable energy facilities, per the policies of the Right-to-Farm Ordinance and the Agricultural Element.

PF-80. Locate solar facilities, and design and orient solar panels in a manner that addresses potential problems of glare consistent with optimum energy and capacity production.

PF-81. The County supports renewable energy facilities that convert and mitigate problem waste streams and residues that adversely impact environmental quality.

SACRAMENTO COUNTY GENERAL PLAN

The "Energy" Element of the County of Sacramento General Plan (County of Sacramento 2017b) includes the goal of Sacramento to reverse the historical trend of increasing per capita consumption of energy; shift toward using a greater share of renewable sources of energy; and shift seasonal and daily peak energy demands to increase the load factor of electrical generating facilities, while maintaining or enhancing the general standard of living, the level of employment, and the quality of the environment. The Energy Element includes the following objectives and policies that may be applicable to the project:

Objective II: Reduce the reliance on non-renewable energy sources with emphasis on those in shortest supply.

EN-18. Develop and implement standards for the protection of the solar rights of property owners.

To increase the amount of energy from wind, falling water, and geothermal sources, it is the policy of Sacramento County to:

EN-19. Support the development and use of renewable sources of energy, including but not limited to biomass, solar, wind, and geothermal.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

GHG emissions have the potential to adversely affect the environment because such emissions contribute cumulatively to global climate change. It is unlikely that a single project will contribute significantly to climate change, but cumulative emissions from many projects could affect global GHG concentrations and the global climate system. Therefore, impacts are analyzed within the cumulative context of the project's potential contribution to the significant impact of global climate change.

Based on Appendix G of the CEQA Guidelines, implementation of the proposed project would result in a cumulatively considerable contribution to the significant impact of climate change if it would:

- generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, or
- conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Section 15064.4(b) of the CEQA Statute and Guidelines, concerning determining the significance of impacts from GHG emissions, states that a lead agency may consider the following three factors in assessing the significance of impacts from GHG emissions.

- The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of GHG

> emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

As stated in Appendix G of the CEQA Guidelines, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations.

On April 23, 2020, the SMAQMD Board of Directors adopted the Update to the Recommended GHG Emissions Thresholds of Significance, which established thresholds of significance for GHG emissions designed to analyze a project's compliance with applicable State laws, including AB 32 and SB 32 (SMAQMD 2020a). The SMAQMD developed the thresholds based on determining Sacramento County's share of statewide 2030 GHG emissions by sector, determining the share of Sacramento County 2030 emissions from existing development versus new development, allocating 2030 GHG emissions from new development among land uses and place types to set numeric thresholds, and setting best management practices by land use and place types that achieve those numeric thresholds. Specifically, the SMAQMD adopted a mass emissions based threshold for the construction phase of all project types of 1,100 MT CO_2e per year (SMAQMD 2021).

For operational emissions, the SMAQMD has developed an operational screening table, which shows sizes of development projects at which 1,100 MT CO_2e would not be exceeded, including implementation of Tier 1 Best Management Practices[1]. Tier 1 Best Management Practices requires that projects be designed and constructed without natural gas infrastructure (BMP 1), and that projects meet the current CALGreen Tier 2 standards and that all electric vehicle (EV) capable spaces shall instead be EV ready. Since the proposed project's land use development type is not included in the SMAQMD operational screening level table, this analysis estimated the project's annual GHG emissions in the first year of operation.

METHODOLOGY

Short-term construction and decommissioning activities and long-term operations of the proposed project would generate GHG emissions associated with off-road and on-road exhaust and other emission sources itemized in Chapter 5, "Air Quality." Construction- and decommissioning-related and operational mobile sources (both off-road and on-road) of GHG emissions were modeled using the same methods and assumptions as those described in Chapter 5 "Air Quality," of this EIR. In addition to those sources identified in the air quality analysis that would contribute to regional criteria air pollutant emissions, operations would include the use of SF_6, which is a high-GWP GHG. Potential MT CO_2e of SF_6 that could result from annual project operations were estimated based on the

[1] 1,100 MT CO_2e/year is the current SMAQMD de minimis threshold. By complying with Best Management Practices 1 and 2 (removing natural gas, EV-ready), small projects would reduce emissions to be consistent with State goals (SMAQMD 2020a).

estimated SF_6 requirement, a maximum fugitive emissions rate of one percent based on current California Code of Regulations Title 17 CCR Sections 95350 et seq., and a GWP of 23,900 for SF_6 compared to CO_2. The analysis also considered the net GHG emissions benefit that the proposed project could contribute due to the production of energy from a GHG-free source. Appendix AQ-1 provides the detailed calculation inputs, assumptions, and outputs.

Impact CC-1: Generate Greenhouse Gas Emissions, Either Directly or Indirectly, that May have a Significant Impact on the Environment

A primary objective of the proposed project includes reducing GHG emissions produced as a result of electricity generation associated with SMUD's power mix that serves the region, and to assist SMUD in achieving its 2030 Net Zero goal. However, GHGs would also be emitted as a result of short-term project construction and decommissioning activities and long-term operational activities.

Construction and Decommissioning

During construction and decommissioning, the use of off-road equipment and on-site vehicles, as well as vehicle trips (e.g., construction worker commutes and haul truck trips) to and from the site, would generate GHG emissions. As detailed in Appendix AQ-1, total construction-related GHG emissions are estimated to be approximately 3,490 MT CO_2e over the eight-month construction period and would exceed the SMAQMD construction-related threshold of 1,100 MT CO_2e per year. Decommissioning activities would generate approximately 989 MT CO_2e over the eight-month decommissioning period and would not exceed the SMAQMD threshold of 1,100 MT CO_2e per year. This impact for construction would be **potentially cumulatively considerable.**

Operation

After construction, the proposed project would require minor operations and maintenance activities that would include up to 10 daily vehicles trips. Maximum annual GHG emissions from project operations were estimated assuming the maximum daily vehicle and equipment activity would occur year-round, which is a conservative estimate of such activity, which may only occur for periods of days to weeks throughout the year. Operational GHG emissions estimates by emissions source are shown in Table CC-1.

Total annual GHG emissions that would be generated as a result of operations and maintenance activities would be less than 114 MT CO_2e per year. When considering that this estimate reflects a conservative assumption of peak maintenance activities occurring year-round and does not consider future emissions reductions in vehicle and equipment operations due to increasing regulatory requirements and implementation of cleaner technology, long-term annual operations and maintenance emissions would likely be even less than estimated. These operational GHG emissions would be less than the SMAQMD *de minimis* screening level and the proposed project's operational emissions would not be considered to have a cumulatively considerable contribution to the significant impact of global climate change. In addition, the proposed project would not

include any natural gas infrastructure, and would therefore, be consistent with SMAQMD Best Management Practice 1. Furthermore, the project is not a typical land use development that would be required to comply with CALGreen requirements, such as commercial and residential land use developments, and SMAQMD Best Management Practice 2 would not be applicable. Therefore, this impact for operations would be **less than cumulatively considerable.**

Table CC-1. Proposed Project Operational GHG Emissions in the First Operational Year

Proposed Project Operational Emissions Source	Total GHG Emissions (MT CO_2e per year)
Area[1]	7.37
Energy	82.95
Mobile	10.86
Waste	2.36
Water	10.13
Total Annual Emissions	**113.67**
SMAQMD Threshold (de minimis)	**1,100**
Exceed Threshold?	**No**

Source: See Appendix AQ-1 for detailed methodology, assumptions, and calculations.

Notes: GHG = Greenhouse gas; MT CO_2e = metric tons of carbon dioxide equivalents; SF_6 = sulfur hexafluoride; SMAQMD = Sacramento Metropolitan Air Quality Management District

[1] Area source emissions include fugitive SF_6 emissions at a maximum rate of 1 percent SF_6-containing switchgear and equipment.

The proposed project's contribution as a GHG-free energy resource is also important to acknowledge as a valuable long-term benefit of the proposed project. As a GHG-free energy resource, proposed project operations would serve to increase SMUD's renewable energy supply and help reduce GHG emissions associated with SMUD's power generation.

The project's 50-megawatt capacity was estimated to generate approximately 130,000 megawatt hours per year. As detailed in Appendix AQ-1, SMUD's most recently published GHG emissions intensity factor of 360 pounds of CO_2e per megawatt-hour for the year 2021 was used to calculate the proposed project's net emissions benefit for an initial operational year of 2023, assuming a linear progress of SMUD's incorporation of GHG-free energy resources into its power mix of 100 percent carbon-free energy by 2045. Thus, if the renewable electricity generated by the project were to be used instead of electricity generated by SMUD's current sources projected to the 2023 calendar year, the project would provide a potential offset of up to 19,459 MT CO_2e in the first year of operation. See Appendix AQ-1 for additional details and calculations.

The average GHG emissions intensity factor for SMUD's overall power mix will decrease over time as the percentage of renewable energy resources contributing to the power mix increases. SB 100 requires retail sellers of electricity, including investor-owned utilities

and community choice aggregators, to provide at least 60 percent of their supply from renewable sources by the year 2030, and 100 percent by the year 2045; SMUD's 2030 Zero Carbon Plan strategy has a target of eliminating carbon emissions from its power supply by 2030, which is more aggressive that the current regulatory requirements. As the regional power mix continues to become increasingly dominated by GHG-free energy sources, the relative GHG emissions benefit potential of the project could be considered to diminish. However, as noted in Section 3.2 of Appendix AQ-1, emissions generated by vehicle and equipment exhaust would also likely decrease over time due to increased regulatory requirements, improved (i.e., less emitting) technology, and fleet turnover. Neither these reduced emissions rates associated with operational vehicle and equipment use, nor the declining GHG intensity of the energy power source mix are accounted for over the proposed project's operational horizon, as they are speculative and do not reflect existing conditions. Although the quantifiable GHG emissions offsets would diminish over time when considering the overall shift toward a 100 percent renewable energy power mix, this does not negate the overall benefit of the project. The development of renewable energy sources, such as the proposed project, are a necessity to meet the State Renewables Portfolio Standard requirements, realizing a 100 percent renewable energy power mix, and achieving overall state GHG emissions reduction targets, SMUD's 2030 Net Zero goal, and measures included in the Final Draft CAP.

Mitigation Measures

Although the project's construction-related and potential decommissioning GHG emissions would be offset within the first year of operations through the renewable electricity generated by the project, Mitigation Measure CC-1, is included to reduce construction-related exhaust emissions to the maximum extent feasible.

CC-1. Implement Construction GHG Emission Best Management Practices during Construction Activities

- Improve fuel efficiency from construction equipment.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 3 minutes (5 minute limit is required by the state airborne toxics control measure [Title 13, sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.
- Train equipment operators in proper use of equipment.
- Use the proper size of equipment for the job.
- Use equipment with new technologies (repowered engines, electric drive trains).

- Perform on-site material hauling with trucks equipped with on-road engines (if determined to be less emissive than the off-road engines).
- Use alternative fuels for generators at construction sites such as propane or solar or use electrical power.
- Use CARB-approved low carbon fuel for construction equipment.
- Encourage and provide carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.
- Develop a plan to efficiently use water for adequate dust control.
- Reduce electricity use in the construction office by using compact fluorescent bulbs or light emitting diodes, powering off computers every day, and replacing heating and cooling units with more efficient ones.
- Recycle or salvage non-hazardous construction and demolition debris, when practicable (goal of at least 75% by weight).

Significance after Mitigation

Because the project would contribute GHG-free energy resource and provide a GHG emissions benefit of up to 19,459 MT CO_2e in the first year of operation, which would offset the project's construction and decommissioning GHG emissions, this impact would be **less than cumulatively considerable**. Implementation of Mitigation Measure CC-1 would further reduce the potential impact.

Impact CC-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases

The project would provide a potential reduction in GHG emissions each year of operation if the electricity generated by the project's solar energy facilities were to be used instead of electricity generated by fossil-fuel sources. Several regulatory measures have been adopted to increase renewable energy in California. SB 100 requires all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators, to achieve Renewable Portfolio Standards of 60 percent renewable energy by 2030 and requires that all of the state's electricity come from carbon-free resources by 2045. The project would provide a source of renewable energy to achieve the Renewable Portfolio Standards' target of 60 percent by 2030 set by SB 100 and help the state reach its goal to be carbon neutral by 2045, assist SMUD in achieving the 2030 Net Zero goal, as well as contribute toward the County's General Plan and Final Draft CAP goals of reducing the reliance on non-renewable energy sources and supporting the development and use of renewable sources of energy, including but not limited to solar. In addition, the project would comply with all current and future regulations, including California Code of Regulations Title 17 CCR Sections 95350 et seq. for reducing GHG emissions from gas-insulated equipment, such as switchgears used in solar power generation facilities like the proposed project. In addition, building construction and design would comply with California's Building Energy Efficiency

Standards, which are designed to reduce wasteful and unnecessary energy consumption in newly constructed buildings. The 2022 Building Energy Efficiency Standards, which were adopted on August 11, 2021, and become effective January 1, 2023, include prescriptive requirements for cool roofs and increased solar reflectance (CEC 2022), which also help reduce the urban heat island effect (EPA 2008). In addition, ground-based solar PV development is identified as an urban heat mitigation measure with local cooling benefits within the SMAQMD's Capital Region Urban Heat Island Mitigation Project (SMAQMD 2020b). Therefore, the proposed project would be consistent with, and would not conflict with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of greenhouse gases. This impact would be **less than cumulatively considerable.**

8 CULTURAL AND PALEONTOLOGICAL RESOURCES

INTRODUCTION

This chapter describes the environmental and regulatory setting for cultural resources and paleontological resources in the project area, identifies and analyzes impacts related to cultural resources and paleontological resources from implementation of the Sloughhouse Solar project (proposed project), and, if necessary, recommends mitigation measures to reduce or eliminate significant impacts. Tribal cultural resources (TCRs) are separate and distinct from cultural resources, and are discussed in Chapter 12, Tribal Cultural Resources. In addition, because construction of the proposed project may have significant effects on unique paleontological resources, the paleontology analysis has been included in this EIR chapter.

This discussion of cultural resources in this chapter are based on, and contains portions of the Sloughhouse Solar Farm Cultural Resources Inventory, Evaluation, and Finding of Effect Report prepared by Dudek in November 2022. This report contains confidential information regarding the location of archaeological resources. To deter vandalism, artifact hunting, and other activities that can damage such resources, these studies are not included as appendices. California Government Section Code 6254.10 exempts archaeological sites from the California Public Records Act, which requires that public records be open to public inspection.

ENVIRONMENTAL SETTING

The proposed project site is generally located west of Dillard Road, east of the Cosumnes River, and south of Meiss Road in the community of Sloughhouse in unincorporated Sacramento County, California. The rural setting is surrounded primarily by agricultural parcels except for the northwestern portion of the project area, which is bordered by the Cosumnes River. No pre-contact[1] cultural resources have been identified in the project site. The cultural resources recorded as part of this project date from the historic age. Therefore, the following context relates to the formation of the community of Sloughhouse including agriculture and reclamation.

The proposed project site is in the indigenous tribal territory of the Plains Miwok. Of the tribes contacted to consult on the project under Assembly Bill 52, the United Auburn Indian Community and the Wilton Rancheria actively participated (see Chapter 12, Tribal Cultural Resources, for additional information).

[1] Pre-contact archaeological resources are those that predate Native American contact with Europeans. In California, the pre-contact period continued well into the eighteenth century as late as AD 1769 with the Spanish exploration of what is now San Francisco Bay by Gaspar de Portolá (Dudek 2021).

CULTURAL RESOURCES

COMMUNITY OF SLOUGHHOUSE

The project site is in the community of Sloughhouse, which was initially developed by the recipients of Rancho Cosumnes and Rancho Omuchumnes grants, Jared Sheldon and William Daylor, beginning in the 1840s. Sheldon and Daylor were well positioned along the Cosumnes River at the beginning of the Gold Rush and operated a hotel, trading goods, ranching, agriculture, and mining during the late 1840s. Sheldon was responsible for construction of the first hotel on the slough in 1850, colloquially known as Slough House, for which the town is named.

A fast-paced period of development characterized the earliest period of the community of Sloughhouse. In 1846–1847, Sheldon completed a grist mill along the Cosumnes River at the site when present-day Meiss Road meets the northern bank of the river. In 1847, Sheldon and Daylor married a pair of young sisters, named Catherine and Sarah Rhodes, forming the first non-native community along the Cosumnes River. When the Gold Rush began, the location of several roads through the Cosumnes River Valley leading to the Sierra Nevada foothills prompted the establishment of new mining camps along the Cosumnes River, including Michigan Bar, Cooks Bar, and Sebastopol. As miners staked claims along the Cosumnes River, ferries, toll bridges, and hotels soon cropped up to accommodate their needs. In 1850, Sheldon completed the Slough House hotel at the present-day intersection of Deer Creek and Jackson Road (Highway 16), beside which Daylor established a trading post that later became the Cosumnes Post office and store.

In 1851, the success that Sheldon and Daylor found in Sloughhouse promptly came to an end. Sheldon completed a dam on the Cosumnes River to aid in operating his grist mill more reliably. The miners working the now-flooded claims upstream from the dam were furious; they threatened violence, and in July 1851, they began dismantling the new dam. Sheldon confronted the miners and was shot during the ensuing altercation. Following the untimely death of Sheldon, Daylor died later the same year from cholera. Catherine and Sarah both remarried and continued to reside in Sloughhouse until their death.

Like in much of California, when gold fever subsided, agriculture became the focus of economic life in the vicinity of Sloughhouse. Early on, the flood-prone land along the Cosumnes River was used for cattle ranching and dairy farming, and crops of hops and wheat thrived in the rich, alluvial bottom soil. In the late nineteenth and early twentieth centuries, plums and peaches became popular and successful crops. Today, the community of Sloughhouse remains a part of the unincorporated area of Sacramento County and the modest population of 6,937 residents within the census county division is largely supported by agriculture and related industries.

The community of Sloughhouse is situated near two Cosumnes River levee segments. The creation of the Cosumnes River levees by private landowners between 1850 and 1900 made the development and cultivation of these areas feasible. The Cosumnes River Levee-South/Sacramento County Levee 41 and the Cosumnes River Levee-North/Sacramento County Levee 18, constitute the first river-management and flood

control mechanisms in the region that protected the growing populations from flooding, thus making settlement and expansion of agriculture industry possible.

CULTURAL RESOURCES WITHIN THE PROJECT AREA OF POTENTIAL EFFECT (APE)

The project site is defined as all areas subject to ground disturbance for project implementation and operation. The Area of Potential Effect (APE) is defined as the Sacramento County Assessor parcels 126-0110-001 and 126-0110-003 (project parcels) that contain the project site, and a 0.5-mile buffer from the project site to account for potential visual effects to cultural resources (see Plate CR-1).[2]

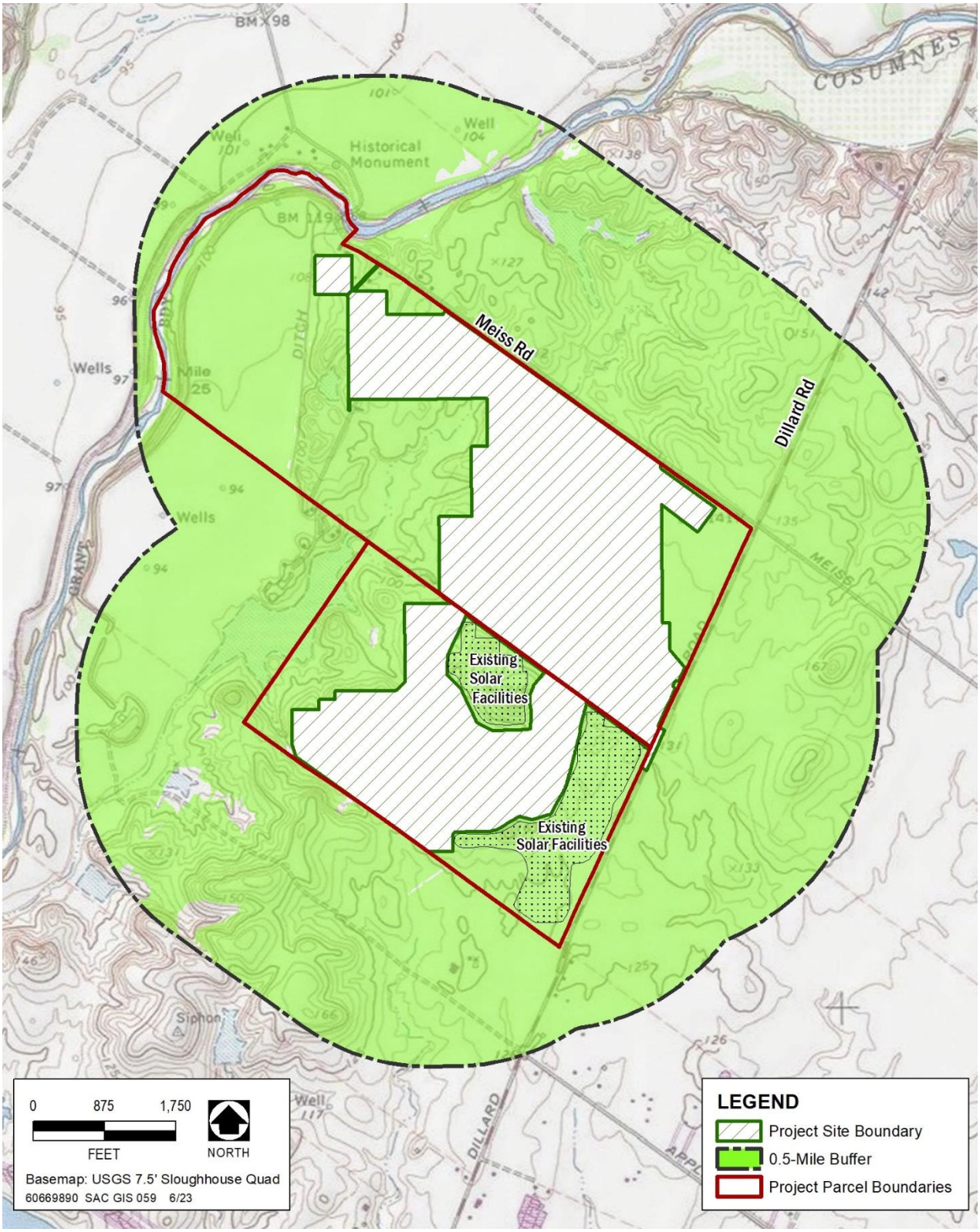
The cultural resources investigation was conducted in two phases and the APE for the project evolved. During the first phase, Dudek archaeologists conducted an intensive-level pedestrian survey of the project site and the larger project parcels on October 20–28, 2020 and recorded a historic-age home site within the project site and the concrete footings of a previously recorded historic-age bridge outside of the project site but within the project parcels. Dudek recommended that neither the historic-age home site remnants nor the concrete footings of a previously recorded historic-age bridge as archaeological resources were eligible for listing in the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR).

Dudek architectural historians conducted an intensive-level survey of the project parcels and included a parcel directly adjacent to the project site within the 0.5-mile buffer that contains buildings and structures at least 45 years of age (constructed on or before 1975) on October 28, 2020 and recorded three historic-age properties with buildings and structures and a historic-age irrigation ditch over 45 years of age. The sole historic-age resource within the project site is a historic-age farm, which was recommended by Dudek as not eligible as a historical resource. In addition, Dudek recommended that none of the historic-age properties recorded within the project site or project parcels were eligible for listing in the NRHP or CRHR as individual properties or part of a larger rural historic landscape.

The project APE was expanded in 2022 to include a 0.5-mile buffer from the project site, which resulted in additional historic-age properties within the APE. Dudek architectural historians conducted additional fieldwork on August 28 and September 3, 2022. No additional historic-age properties were identified within the project site as part of the APE expansion. Twelve historic-age properties related to farming/agriculture were identified within the larger 0.5-mile buffer from the project site. Of these, two resources, the Cosumnes River Levee-South/Sacramento County Levee 41 and the Cosumnes River Levee-North/Sacramento County Levee 18, were recommended as historical resources by Dudek. However, these two resources are outside of the project site and the project would not result in direct or indirect substantial adverse change to the resources.

[2] An “area of potential effect” is a geographic area that is used particularly in cultural resources analyses that may represent an area beyond the “project site” that is defined for the balance of environmental analyses.

Plate CR-1: Project Area of Potential Effect (APE)



PALEONTOLOGICAL RESOURCES

REGIONAL AND LOCAL GEOLOGY

The project site is located along the western margin of the Sierra Nevada and the eastern margin of the Sacramento Valley. The Sierra Nevada trends north-northwest from Bakersfield to Lassen Peak and includes the Sierra Nevada mountain range and a broad belt of western foothills. The Sierra Nevada block is composed of northwest-trending belts of metamorphic, volcanic, and igneous rocks that have undergone intense deformation, faulting, and intrusion. Active faults that mark the eastern edge of the Sierra Nevada have resulted in upthrusting and tilting of the entire Sierra Nevada block in the last five million years—steeply on the eastern edge (adjacent to the Mono Basin), and gently along the western edge (where the project site is located). The gently rolling Sierra Nevada foothills are comprised of metamorphosed sedimentary rocks that have been intruded by igneous rocks. The rock formations that make up the western edge of the Sierra Nevada block likely originally formed as a volcanic arc that was later accreted (added) to the western margin of the continent during the Jurassic period. The Sacramento Valley is part of the Great Valley Geomorphic Province, which is a forearc basin composed of thousands of feet of sedimentary deposits that has undergone periods of subsidence and uplift over millions of years. Overlying the thick sequence of sedimentary rock units that form the deeply buried bedrock units in the mid-basin areas of the valley are shallower Holocene (11,700 years Before Present [B.P.] to Present Day) and Pleistocene-age (2.8 million years B.P. to 11,700 years B.P.) alluvial deposits. At the project site, this alluvium is composed of sediments from the Sierra Nevada to the east, which were carried by water and deposited on the valley floor.

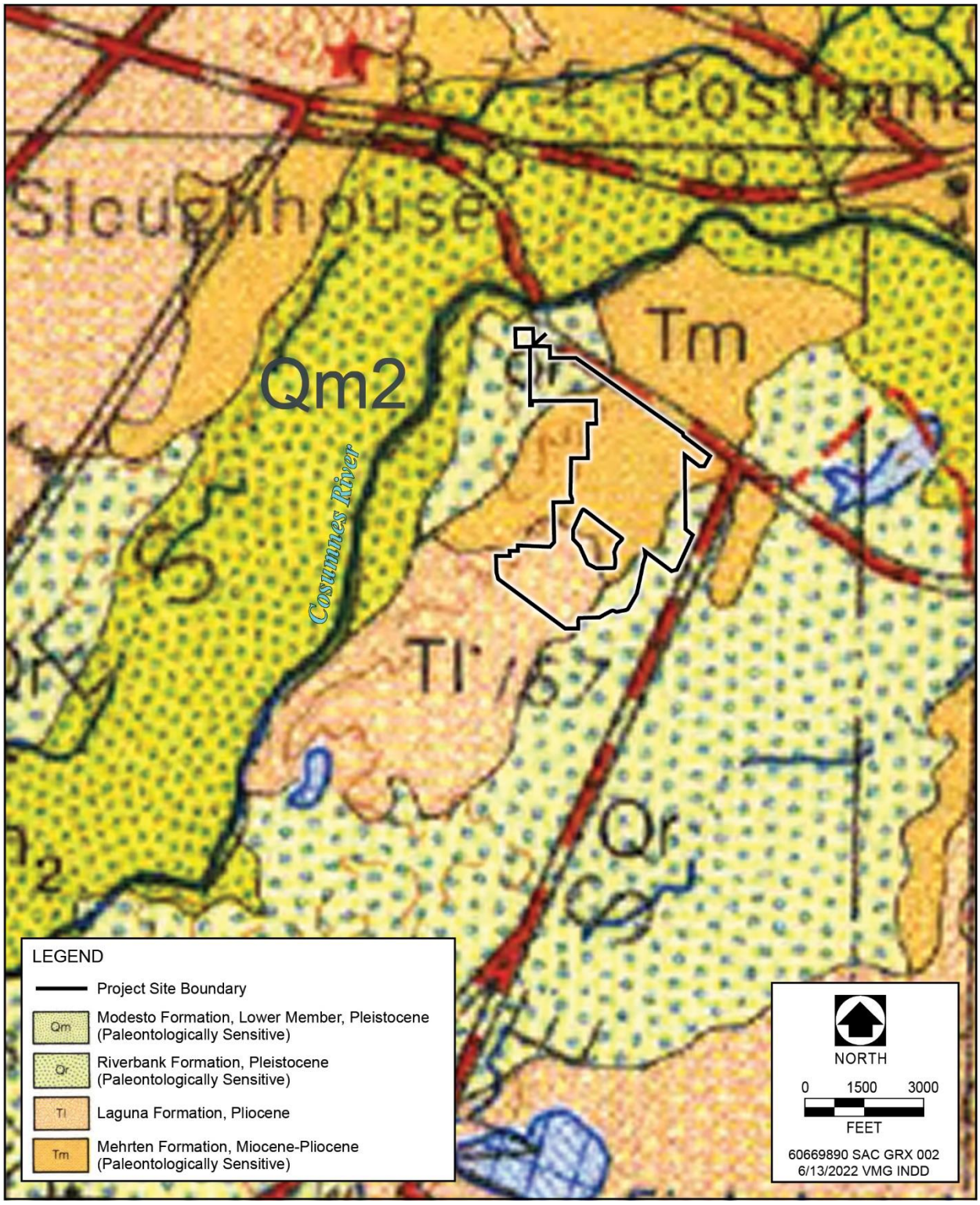
Based on a review of relevant geologic mapping, the project site is underlain by the Riverbank, Laguna, and Mehrten Formations (Wagner et al. 1981). The geologic formations at the project site are shown in Plate CR-2.

PALEONTOLOGICAL SENSITIVITY ASSESSMENT CRITERIA

A paleontologically sensitive geologic formation is one that is rated high for potential paleontological productivity (i.e., the recorded abundance and types of fossil specimens, and the number of previously recorded fossil sites) and is known to have produced unique, scientifically important fossils. Exposures of a specific geologic formation at any given project site are most likely to yield fossil remains representing particular species or quantities similar to those previously recorded from that geologic formation in other locations. Therefore, the paleontological sensitivity determination of a rock formation is based primarily on the types and numbers of fossils that have been previously recorded from that formation.

In its standard guidelines for assessment and mitigation of adverse impacts on paleontological resources, the Society of Vertebrate Paleontology (SVP 2010) established four categories of sensitivity for paleontological resources: high, low, no, and undetermined. Areas where fossils have been previously found are considered to have a high sensitivity and a high potential to produce fossils. Areas that are not sedimentary in

Plate CR-2: Geologic Formations and Paleontological Sensitivity



Source: Wagner et al. 1981, adapted by AECOM in 2022

origin and that have not been known to produce fossils in the past typically are considered to have low sensitivity. Areas consisting of high-grade metamorphic rocks (e.g., gneisses and schists) and plutonic igneous rocks (e.g., granites and diorites) are considered to have no sensitivity. Areas that have not had any previous paleontological resource surveys or fossil finds are considered to be of undetermined sensitivity until surveys are performed. After reconnaissance surveys, a qualified paleontologist can determine whether the area of undetermined sensitivity should be categorized as having high, low, or no sensitivity. In keeping with the SVP significance criteria, all vertebrate fossils are generally categorized as being of potentially significant scientific value.

Paleontological Sensitivity Assessment

Table CR-1 presents the results of the paleontological sensitivity assessment based on a review of geologic maps, a literature review, and a paleontological resources records search performed at the University of California, Berkeley Museum of Paleontology (UCMP) on November 22, 2021.

Table CR-1: Paleontological Sensitivity Assessment

Formation Name and Age	Composition	Fossils	Sensitivity
Modesto Formation, Pleistocene (upper member 12,000–26,000 years B.P.; lower member 29,000–42,000 years B.P.).	Upper member: unconsolidated coarse sand and sandy silt. Lower member: well-sorted silt and fine sand, silty sand, and sandy silt. Forms alluvial terraces, and some alluvial fans and abandoned channel ridges, of major rivers such as the Sacramento and American.	Fossil specimens from sediments referable to the Modesto Formation have been reported at a variety of locations throughout the Sacramento and San Joaquin Valleys, including Stockton, Tracy (along the Delta-Mendota Canal), Manteca, Modesto, and Merced. The Tranquility site in Fresno County (UCMP V-4401), has yielded more than 130 Rancholabrean-age fossils of fish, turtles, snakes, birds, moles, gophers, mice, wood rats, voles, jack rabbits, coyote, red fox, grey fox, badger, horse, camel, pronghorn antelope, elk, deer, and bison from sediments referable to the Modesto Formation.	High
Riverbank Formation, Pleistocene (130,000–450,000 years B.P.)	Weathered reddish gravel, sand, and silt comprising older alluvial fans and terraces of the American River and other major rivers and streams in the Sacramento Valley	Nine recorded vertebrate fossil localities in the Sacramento area, including a Teichert Gravel Pit approximately 6 miles northeast of the project site. Localities have yielded remains of Rancholabrean-age mammoth, bison, camel, coyote, horse, Harlan's ground sloth, mammoth, antelope, deer, rabbit, woodrat, fish, mole, mice, squirrel, snake, and gophers, dire wolf, frog, Pacific pond turtle, and the family Anatidae (ducks, geese, and swans). There are numerous additional vertebrate fossil localities from the Riverbank Formation and from similar unnamed Rancholabrean-age alluvial sediments in Yolo, San Joaquin, Merced, Stanislaus, Fresno, and Madera Counties.	High
Laguna Formation,	Reddish to yellowish brown silt to sandy silt and clay with	There is only published one reference to a Pliocene-age vertebrate fossil specimen from	Low

Formation Name and Age	Composition	Fossils	Sensitivity
Pliocene (approximately 5 million years B.P.)	minor lenticular gravel beds, deposited on broad floodplains by meandering, slow-moving streams. These deposits originate from granitic Sierra Nevada basement complex rocks.	the Laguna Formation in Northern California: Stirton (1939) refers to a Pliocene-age fossil specimen of a horse tooth found in clayey silt, probably of the Laguna Formation although not definitely identified as such, in a well near the town of Galt, in Sacramento County.	
Mehrten Formation, Pliocene–Miocene (approximately 9 million years B.P.)	Consists predominantly of very hard, cemented, lehar (volcanic mudflow) deposits with occasional beds of volcanic ash derived from andesitic volcanic sources in the Sierra Nevada. Contains lenticular deposits of weakly to strongly cemented, well rounded, andesitic boulders, cobbles, and gravels in a fine- to medium-grained andesitic sandstone matrix.	Several specimens of plant fossils have been recovered from the Mehrten Formation in Granite Bay, Roseville, and Rocklin. Vertebrate mammal and plant fossils have been reported from the Mehrten Formation throughout the Sierra Nevada foothills and the eastern margin of the Central Valley. The closest recorded vertebrate fossil locality within the Mehrten Formation is near Camanche Reservoir, where a specimen of *Pliohippus* (horse) was recovered. Other vertebrate fossils have been recovered from the Mehrten Formation from over 40 locations in Calaveras, San Joaquin, Stanislaus, Tuolumne, and Merced Counties.	High

Note: B.P. = Before Present; UCMP = University of California, Berkeley Museum of Paleontology

Sources: Hilton et al. 2000, Helley and Harwood 1985, Jefferson 1991a and 1991b, Kolber 2004, Stirton 1939, UCMP 2021

REGULATORY SETTING

FEDERAL

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT, 1966

Federal regulations for cultural resources are governed primarily by Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended). Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and affords the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. The ACHP's implementing regulations are the "Protection of Historic Properties" 36 Code of Federal Regulations (CFR) Part 800. The Federal agency first must determine whether it has an undertaking that is a type of activity that could affect historic properties. Historic properties are those that meet the criteria for or are listed in the NRHP.

NATIONAL REGISTER OF HISTORIC PLACES

"Historic properties," as defined by the ACHP, include any "prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the NRHP maintained by the Secretary of the Interior" (CFR Section 800.16(l)). Eligibility for inclusion in the NRHP is determined by applying the following criteria, developed by the National Park Service in accordance with the NHPA:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important in prehistory or history.

Integrity is defined in NRHP guidance as “the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity” (National Parks Service 1995). NRHP guidance further asserts that properties must have been completed at least 50 years before evaluation to be considered for eligibility. Properties with construction completed fewer than 50 years before evaluation must be proven to be “exceptionally important” (criteria consideration G) to be considered for listing.

STATE

CALIFORNIA ENVIRONMENTAL QUALITY ACT AND THE CALIFORNIA REGISTER OF HISTORICAL RESOURCES

Under the California Environmental Quality Act (CEQA), lead agencies must consider the effects of their projects on historical resources. CEQA defines a “historical resource” as a resource listed in, or determined to be eligible for listing in, the CRHR, a resource included in a local register of historical resources, and any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (Section 15064.5[a] of the Guidelines). Sacramento County does not currently have a local register. Public Resources Code (PRC) Section 5024.1 requires that any properties that can be expected to be directly or indirectly affected by a proposed project be evaluated for CRHR eligibility. According to PRC Section 5024.1(c)(1–4), a resource may be considered historically significant if it retains integrity and meets at least one of the following criteria. A property may be listed in the CRHR if the resource:

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

2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region or method of installation, or represents the work of an important creative individual, or possesses high artistic values; or

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

To be considered eligible, a resource must meet one of the above stated criteria and also retain integrity. Integrity has been defined by the National Park Service as consisting of seven elements: location, design, setting, materials, workmanship, feeling, and association.

Impacts to historical resources that materially impair those characteristics that convey its historical significance and justify its inclusion or eligibility for the NRHP or CRHR are considered a significant effect on the environment (CEQA Guidelines Section 15064.5).

In addition to historically significant resources, which can include archaeological resources that meet the criteria listed above, an archeological site may meet the definition of a “unique archeological resource” as defined in PRC Section 21083.2(g):

An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Section 21083.2 (a), (b) and (c)). State CEQA Guidelines Section 15064.5, subdivision (e), requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the Native American Heritage Commission (NAHC) must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as timely identified by the NAHC. Section 15064.5 directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

Public Resources Code, Section 5097.5

PRC Section 5097 specifies the procedures to follow in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the NAHC. PRC Section 5097.5 states the following:

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.

Public Resources Code, Section 5097.98

PRC Section 5097.98 states that, whenever the NAHC receives notification of Native American human remains from a county coroner, the NAHC shall immediately notify the most likely descendant (MLD). The MLD may, with permission from the owner of the land in which the human remains were found, inspect the site and recommend to the owner or the responsible party conducting the excavation work a means for treating and/or disposing of the human remains and any associated grave goods. The MLD is required to complete their site inspection and make their recommendation within 48 hours of their notification from the NAHC.

Health and Safety Code, Section 7052 and 7050.5

Section 7052 of the Health and Safety Code states that the disturbance, mutilation, or removal of interred human remains is a felony if the remains are within a dedicated cemetery and a misdemeanor if interred outside of a dedicated cemetery. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner examines the find and determines whether the remains are subject to various laws, including recognizing whether the remains are or may be those of a Native American. If determined to be Native American, the coroner must contact the NAHC.

California Native American Graves Protection and Repatriation Act, Health and Safety Code Section 8010 through 8030

In the California Health and Safety Code, Division 7, Part 2, Chapter 5 broad provisions are made for the protection of Native American cultural resources. The Act sets the state policy to ensure that all California Native American human remains and cultural items are treated with due respect and dignity. The Act also provides the mechanism for disclosure and return of human remains and cultural items held by publicly funded agencies and museums in California. Likewise, the Act outlines the mechanism with which California Native American tribes not recognized by the federal government may file claims to human remains and cultural items held in agencies or museums.

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. This law requires that if human remains are discovered, construction or excavation activity must cease and the County Coroner must be notified. If the remains are of a Native American, the coroner must notify the NAHC. The NAHC then notifies those persons most likely to be descended from the Native American whose remains were discovered. The California Native American Historical, Cultural, and Sacred Sites Act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

California Health and Safety Code

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the county coroner has examined the remains (Section 7050.5b). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the California NAHC within 24 hours (Section 7050.5c). The NAHC will notify the MLD. With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains, and items associated with Native Americans.

California Government Code Section 6254.10

Nothing in this chapter requires disclosure of records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the NAHC, another State agency, or a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a State or local agency.

Local

Sacramento County General Plan

Cultural Resources

The *Sacramento County General Plan of 2005–2030* (Sacramento County 2011, as updated in 2017) Conservation Element, states under Section VI, Cultural Resources, the following goal and six objectives:

Promote the inventory, protection and interpretation of the cultural heritage of Sacramento County, including historical and archaeological settings, sites, buildings, features, artifacts and/or areas of ethnic historical, religious or socio-economical importance.

1. Comprehensive knowledge of archeological and historic site locations.

2. Attention and care during project review and construction to ensure that cultural resource sites, either previously known or discovered on the project site, are properly protected with sensitivity to Native American values.

3. Structures with architectural or historical importance preserved to maintain contributing design elements.

4. Known cultural resources protected from vandalism unauthorized excavation, or accidental destruction.

5. Properly stored and classified artifacts for ongoing study.

6. Public awareness and appreciation of both visible and intangible historic and cultural resources.

To implement the primary goal and the objectives, the Conservation Element contains the following policies relevant to the project:

CO-150. Utilize local, state and national resources, such as the North Central Information Center (NCIC), to assist in determining the need for a cultural resources survey during project review.

CO-152. Consultations with Native American tribes shall be handled with confidentiality and respect regarding sensitive cultural resources on traditional tribal lands.

CO-153. Refer projects with identified archeological and cultural resources to the Cultural Resources Committee to determine significance of resource and recommend appropriate means of protection and mitigation. The Committee shall coordinate with the NAHC in developing recommendations.

CO-154. Protection of significant prehistoric, ethnohistoric and historic sites within open space easements to ensure that these resources are preserved in situ for perpetuity.

CO-155. Native American burial sites encountered during preapproved survey or during construction shall, whenever possible, remain in situ. Excavation and reburial shall occur when in situ preservation is not possible or when the archeological significance of the site merits excavation and recording procedure. On-site reinterment shall have priority. The project developer shall provide the burden of proof that off site reinterment is the only feasible alternative. Reinterment shall be the responsibility of local tribal representatives.

CO-156. The cost of all excavation conducted prior to completion of the project shall be the responsibility of the project developer.

CO-157. Monitor projects during construction to ensure crews follow proper reporting, safeguards, and Policy procedures.

CO-158. As a condition of approval of discretionary permits, a procedure shall be included to cover the potential discovery of archaeological resources during development or construction.

CO-159. Request a Native American Statement as part of the environmental review process on development projects with identified cultural resources.

CO-164. Structures having historical and architectural importance shall be preserved and protected.

CO-165. Refer projects involving structures or within districts having historical or architectural importance to the Cultural Resources Committee to recommend appropriate means of protection and mitigation.

CO-166. Development surrounding areas of historic significance shall have compatible design in order to protect and enhance the historic quality of the areas.

CO-169. Restrict the circulation of cultural resource location information to prevent potential site vandalism. This information is exempt from the "Freedom of Information Act".

CO-171. Design and implement interpretive programs about known archeological or historical sites on public lands or in public facilities. Interpretation near or upon known sites should be undertaken only when adequate security is available to protect the site and its resources.

PALEONTOLOGICAL RESOURCES

The *Sacramento County General Plan of 2005–2030* (Sacramento County 2011, as updated in 2017) Conservation Element includes the following policies related to paleontological resources that apply to the proposed project.

CO-161. As a condition of approval for discretionary projects, require appropriate mitigation to reduce potential impacts where development could adversely affect paleontological resources.

CO-162. Projects located within areas known to be sensitive for paleontological resources, should be monitored to ensure proper treatment of resources and to ensure crews follow proper reporting, safeguards and procedures.

CO-163. Require that a certified geologist or paleoresources consultant determine appropriate protection measures when resources are discovered during the course of development and land altering activities.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

CULTURAL RESOURCES

The significance criteria used to evaluate a project's impacts to cultural resources under CEQA are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to cultural resources would occur if the project would:

- cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.
- cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- disturb any human remains, including those interred outside of formal cemeteries.

PALEONTOLOGICAL RESOURCES

Based on Appendix G of the CEQA Guidelines, the proposed project would have a significant impact on paleontological resources if it would:

- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

A "unique paleontological resource or site" is one that is considered significant under the following professional paleontological standards. An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it meets one of the following criteria:

- a type specimen (i.e., the individual from which a species or subspecies has been described);
- a member of a rare species;
- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;
- a skeletal element different from, or a specimen more complete than, those now available for its species; or
- a complete specimen (i.e., all or substantially all of the entire skeleton is present).

The value or importance of different fossil groups varies, depending on several factors: the age and depositional environment of the rock unit that contains the fossils; their rarity;

the extent to which they have already been identified and documented; and the ability to recover similar materials under more controlled conditions (such as for a research project). Marine invertebrates generally are common, the fossil record is well developed and well documented, and they would generally not be considered a unique paleontological resource. Identifiable vertebrate marine and terrestrial fossils generally are considered scientifically important because they are relatively rare.

METHODOLOGY

CULTURAL RESOURCES

Archival research, Native American consultation, and fieldwork were conducted to establish what cultural resources may be present within the project APE and, furthermore, may be impacted as a result of the implementation of the proposed project. The impact analysis for archaeological, historical resources, and human remains is based on the findings and recommendations of the Sloughhouse Solar Farm Cultural Resources Inventory, Evaluation, and Finding of Effect Report. The analysis is also informed by the provisions and requirements of federal, state, and local laws and regulations that apply to cultural resources.

NCIC RECORDS SEARCH

A records search was completed for the project site (see Plate CR-1) and a 0.5-mile buffer from the project site, by staff at the NCIC at California State University, Sacramento on October 9, 2020. The records search identified 11 previous studies performed within the records search area; of these, three cover at least a portion of the APE. Fourteen resources were identified in the records search. Five of the previously recorded pre-contact sites within the records search 0.5-mile buffer are Native American mound sites located on natural levees adjacent to the Cosumnes River, or on high areas within the river floodplain. These pre-contact sites are outside of the project site. No previously recorded cultural resources were identified in the project site in the NCIC records search.

ADDITIONAL BACKGROUND RESEARCH

According to the U.S. Department of Agriculture Natural Resources Conservation Services, 16 soil types are mapped in the project area, including Bruella sandy loam on the banks of the Cosumnes River; Reiff fine sandy loam in the planted field inside the levee; and Galt Clay, Peters Clay, and Hadselville–Pentz complex in project site. In general, the soils present in the project site are consistent with alluvial lands derived from an assortment of parent materials. Sediment formation in this location would likely have occurred primarily during the Holocene, generally relating to increased water flows following Pleistocene glaciation (possibly 5,000–7,000 B.P.). Although such low-slope locations are characteristically Late Holocene or younger, the distinction between depositional and non-depositional formations are more difficult to discern in the foothills and transitional environment into the valley area. Regardless of the age of sediments in this area, reoccurring alluvial action and flooding would serve to support the development and presence of cultural deposits in the area. The river areas would have been an attractive resource for Native American people, and any natural levees along the

riverbank and higher-elevation areas within the floodplain would have higher potential for buried deposits (Dudek 2021).

NATIVE AMERICAN CONSULTATION

The NAHC was contacted on November 16, 2020, to request a search of its Sacred Lands File. The NAHC responded on December 3, 2020, with a negative result of any known Native American resources on file with the NAHC within the project area and a list of Native American tribal contacts who may have additional knowledge relating to cultural resources in the area (Dudek 2021). See Chapter 12, Tribal Cultural Resources, for responses from the tribes.

FIELD SURVEY

Qualified archaeologists conducted an intensive-level pedestrian survey of the project site and project parcels (see Plate CR-1) on October 20–28, 2020, walking transects spaced no more than 15 meters apart. Based on the results of the NCIC records search of the project parcels that contain the project site and a 0.5-mile buffer, evidence of buried cultural deposits was opportunistically sought through inspection of natural or artificial erosion/excavation exposures and the spoils from rodent burrows. After completion of the pedestrian survey, limited subsurface sampling was performed using a 5-centimeter-diameter auger to probe for buried cultural deposits and reveal soil stratigraphy in several areas of the project site. One previously unrecorded historic-age resource (P-34-005385), the remains of a historic-age home site associated with several ranching features was discovered within the project site and recorded during the pedestrian survey. One previously recorded resource (P-34-002477), the Slough House Bridge, was also recorded as within the northwest corner of one of the project parcels and within the APE, but outside of the project site.

Dudek architectural historians conducted an intensive-level survey of the project parcels and an adjacent parcel to the west that contained buildings and structures at least 45 years of age (constructed on or before 1975) that could be subject to indirect effects, including alteration of setting, noise, and construction-related vibration within a preliminary architectural APE on October 28, 2020. Dudek recorded three historic-age properties with buildings and structures and a historic-age irrigation ditch over 45 years of age on Assessor Parcel Numbers (APN) 126-0110-001, 128-0010-008, and 126-0110-002 and concluded that none of the properties were eligible for listing in the NRHP or CRHR as individual properties or part of a larger rural historic landscape.

The project APE was expanded to include a 0.5-mile buffer from the project site in 2022 and Dudek architectural historians conducted additional fieldwork on August 28 and September 28, 2022. Twelve historic-age properties were identified within the larger 0.5-mile buffer outside of the project parcels. Two resources, the Cosumnes River Levee-South/Sacramento County Levee 41 and the Cosumnes River Levee-North/Sacramento County Levee 18, were identified by Dudek as historical resources. No historical resources were identified within the project parcels or the 0.5-mile buffer that would potentially be affected by the project.

RESULTS

No significant archaeological sites or resources were identified in the project site. No significant historic-age built environment resources were identified in the project site.

Within the larger APE with the 0.5-mile buffer around the project site to account for indirect visual effects of the project, two historical resources were identified: the Cosumnes River Levee-North/Sacramento County Levee 18 and the Cosumnes River Levee-North/ Sacramento County Levee 41. Both levee segments are pre-1900 water management structures constructed to protect against flooding from the Cosumnes River. The period of significance of the levees is defined by the development history of water management in California. Both levees were constructed between 1850, the year the Arkansas Act was enacted, and 1911, the year the State Flood Control Act was enacted. Accordingly, the period of significance is 1850-1900, their estimated date of construction.

The Cosumnes River Levee segments constitute the first river-management and flood control mechanisms in the region, which protected Sloughhouse and nearby communities from flooding, thus making settlement and expansion of agriculture industry possible. For these reasons, the Cosumnes River Levee-South/Sacramento County Levee 18 and the Cosumnes River Levee-North/Sacramento County Levee 41 are recommended eligible at the local level under the NRHP Criterion A and CRHR Criterion 1.

The character-defining features associated with levees, are limited to historic use, alignment, massing, location, design, and continued use as a water management system. The Cosumnes River Levee segment boundaries are defined by their footprint along the Cosumnes River. This boundary encompasses the entirety of the eligible resources and is consistent with historic significance.

PALEONTOLOGICAL RESOURCES

The evaluation of potential impacts related to unique paleontological resources was based on a review of published geologic literature and maps, and a records search at the U.C. Berkeley Museum of Paleontology (2021). The information obtained from these sources was reviewed and summarized to document existing conditions and to identify the potential environmental effects of the proposed project.

ISSUES NOT DISCUSSED FURTHER

All potential archaeological and historical resources issues identified in the significance criteria are evaluated below.

Unique geologic features consist of outstanding natural landforms such as mountain peaks, deep scenic canyons and gorges, scenic rock formations, large waterfalls, volcanic cinder cones, lava fields, or glaciers. There are no unique geologic features within the project site, and the proposed project would have no effect on the geologic features that relate to the Cosumnes River. Thus, there would be **no impact** on unique geologic features and this issue is not evaluated further in this EIR.

Impact CR-1: Cause a Substantial Adverse Change in the Significance of a Historical Resource Pursuant to Section 15064.5

No historically significant cultural resources that qualify as CEQA historical resources were identified within the project site. Within the larger APE, which includes a 0.5-mile buffer from the project site to account for potential visual impacts, are two identified historical resources: the Cosumnes River Levee-South/Sacramento County Levee 41 and the Cosumnes River Levee-North/Sacramento County Levee 18. Both of the levee segments are sited more than 2,000 feet from the northwestern project site boundary and the construction and operation of the project would not result in direct or indirect substantial adverse change to the resources that they would no longer be able to physically convey their historic significance as the first river-management and flood control mechanisms in the region, which protected Sloughhouse and nearby communities from flooding, thus making settlement and expansion of agriculture industry possible. The project would not result in direct or indirect effects to the character-defining features of the levees which are their historic use, alignments, massing, location, design, and continued use as a water management systems. The Cosumnes River Levee segment boundaries are defined by the footprint along the Cosumnes River. This boundary encompasses the entirety of the eligible resources and is consistent with their historic significance. Therefore, **no impact** on a historical resource would occur as a result of project implementation.

Impact CR-2: Cause a Substantial Adverse Change In The Significance of an Archaeological Resource Pursuant to Section 15064.5

No significant pre-contact or historic-age archaeological resources were identified in the project site during field efforts in support of the project, which included limited subsurface investigations. However, based on records search results, there is potential for encountering unanticipated significant archaeological resources as a result of ground disturbance during construction and decommissioning. The NCIC records search identified five previously recorded pre-contact sites within 0.5 mile of the project site. Of particular sensitivity are several pre-contact sites with reported burials that are associated with similar landforms to those within the project site. Given these findings, and the fact that portions of the project site remain relatively undisturbed, the potential of encountering and impacting unknown archaeological resources during project implementation is considered moderate. If such unanticipated discoveries were encountered, impacts on encountered resources would be **potentially significant**.

Mitigation Measures

CR-1. Worker Awareness Environmental Program (WEAP) and Archaeological Monitoring.

Based on technical study results, there is potential for encountering unanticipated significant cultural resources and human remains. As such, pre-construction

preparation and implementation of a WEAP and archaeological monitoring shall occur.

1. ***Worker Awareness Environmental Program and Archaeological Monitoring****. Archaeological monitors shall be present during all initial ground-disturbing activities with the potential to encounter cultural resources. An archaeological monitoring and discovery plan shall be developed under the oversight of a qualified archaeological principal investigator meeting the Secretary of the Interior's Professional Qualification Standards prior to construction. This plan shall identify areas requiring monitoring, roles and responsibilities, and actions to be taken in the event of an inadvertent discovery. Prior to the initiation of ground-disturbing work, construction crews shall be made aware of the potential to encounter cultural resources and the requirement for cultural monitors to be present during these activities. This may occur as part of a WEAP. Archaeological monitoring may be adjusted (increase, decreased, or discontinued) at the recommendation of the archaeological principal investigator based on inspection.*

2. ***Reporting****. Daily monitoring logs shall be completed by an on-site archaeological monitor. Within 60 days following completion of construction, the qualified archaeological principal investigator shall provide an archaeological monitoring report to the County of Sacramento. This report shall include the results of the cultural monitoring program (even if negative), including a summary of any findings or evaluation/data recovery efforts, and supporting documentation that demonstrates all mitigation measures defined in the environmental document were appropriately met. Appendices shall include archaeological monitoring logs and documentation relating to any newly identified or updated cultural resources. This report shall be submitted to the NCIC once considered final.*

CR-2. Cultural Resources and Unanticpated Discoveries.

In the event that human remains are discovered in any location other than a dedicated cemetery, work shall be halted and the County Coroner contacted. For all other potential archaeological or cultural resources discovered during project's ground disturbing activities, work shall be halted until a qualified archaeologist and/or tribal representative may evaluate the resource.

1. **Unanticipated human remains**. Pursuant to Sections 5097.5 and 5097.98 of the State PRC, and Section 7050.5 of the State Health and Safety Code, if a human bone or bone of unknown origin is found during construction, all work is to stop and the County Coroner and Planning and Environmental Review shall be immediately notified. If the remains are determined to be Native American, the coroner shall notify the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the MLD from the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposition

of, with appropriate dignity, the human remains and any associated grave goods.

2. **Unanticipated cultural resources**. In the event of an inadvertent discovery of cultural resources (excluding human remains) during construction or decommissioning, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained at the applicant's expense to evaluate the significance of the find. If it is determined due to the types of deposits discovered that a Native American monitor is required, the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites as established by the NAHC shall be followed, and the monitor shall be retained at the applicant's expense.

    a. Work cannot continue within the 100-foot radius of the discovery site until the archaeologist and/or tribal monitor conducts sufficient research and data collection to make a determination that the resource is either (1) not cultural in origin; or (2) not potentially eligible for listing on the NRHP or CRHR.

    b. If a potentially-eligible resource is encountered, then the archaeologist and/or tribal monitor, Planning and Environmental Review staff, and project proponent shall arrange for either (1) total avoidance of the resource, if possible; or (2) test excavations or total data recovery as mitigation. The determination shall be documented in writing and submitted to the County Environmental Coordinator as verification that the provisions of CEQA for managing unanticipated discoveries have been met.

Significance after Mitigation

Implementation of Mitigation Measures CR-1 and CR-2 would specify pre-construction preparation and implementation of a WEAP and archaeological monitoring actions to reduce the potential impacts in the event of the accidental discovery of human remains or previously unknown archaeological resources during project implementation. These measures include development of an archaeological monitoring and discovery plan, reporting, stopping work, notification of the appropriate agencies and/or Native American contacts, and procedures to evaluate and protect cultural resources. Therefore, with implementation of these recommended mitigation measures, the impact would be **less than significant with mitigation**.

Mitigation Measures for impacts to Tribal Cultural Resources, Mitigation Measures TCR-1a through TCR-1c, are in discussed in Chapter 12, Tribal Cultural Resources.

IMPACT CR-3: DISTURB ANY HUMAN REMAINS, INCLUDING THOSE INTERRED OUTSIDE OF DEDICATED CEMETERIES

No pre-contact or historic-era burials were identified within the project site as a result of the records search. The project is not part of a dedicated cemetery. The NCIC records search indicated that burials of prehistoric Native American origin have been identified within 0.5 mile of the project parcels within the project APE. No pre-contact or historic-era burials were identified within the project site during field efforts in support of the project; however, based on records search results, there is potential for encountering unanticipated human remains during construction and decommissioning. This impact is considered **potentially significant**.

MITIGATION MEASURES

Implement Mitigation Measures CR-1 and CR-2.

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure CR-1 specifies pre-construction preparation and implementation of a WEAP and archaeological monitoring actions required to reduce impacts to unanticipated human remains in the event of accidental discovery during project implementation. Mitigation Measure CR-2 includes appropriate compliance with California Health and Safety Code Section 7050.5, PRC Section 5097.98, and other pertinent regulatory requirements. By implementing these mitigation measures, human remains would be identified and protected, and as a result, would reduce the potential impacts in the event of the accidental discovery or recognition of any human remains during construction and decommissioning. Therefore, with implementation of Mitigation Measures CR-1 and CR-2, this project impact would be **less than significant with mitigation**.

IMPACT CR-4: DAMAGE TO OR DESTRUCTION OF PALEONTOLOGICAL RESOURCES DURING EARTHMOVING ACTIVITIES

The project site is composed of several paleontologically sensitive rock formations; therefore, as further discussed below construction and decommissioning activities could result in accidental damage to, or destruction of, unknown unique paleontological resources.

The project site is composed of the Riverbank, Laguna, and Mehrten Formations (Plate CR-2). As provided in Table CR-1, one vertebrate fossil has been recovered from a Pliocene-age geologic formation, which may be the Laguna Formation, near the town of Galt. This is the only recorded vertebrate fossil locality from the Laguna Formation in California. Therefore, the Laguna Formation is considered to be of low paleontological sensitivity, and earth-moving activities in this formation would result in a less-than-significant impact.

As noted in Table CR-1, numerous vertebrate fossils have been recovered from the Riverbank, and Mehrten Formations throughout the greater Sacramento area, and

throughout the Sacramento and San Joaquin Valleys. Thus, these formations are considered to be of high paleontological sensitivity. All three of these formations are exposed at the surface throughout the project site, and also extend beneath the surface to depths of several hundred feet. Therefore, earthmoving activities during construction or decommissioning in these three formations with high paleontological sensitivity, which occur throughout the project site, could result in accidental damage to or destruction of unique paleontological resources; this impact is considered **potentially significant.**

Mitigation Measures

CR-3. Avoid Impacts to Unique Paleontological Resources.

1. Prior to the start of earthmoving activities, the project applicant shall retain the services of either a qualified archaeologist or a qualified paleontologist to provide training to all construction personnel involved with earthmoving activities regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered.

2. If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work within 100-feet of the find and shall notify the project applicant.

3. The project applicant shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan. The recovery plan may include, but is not limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum curation for any specimen recovered, and a report of findings. The recovery plan shall be submitted to the project applicant for review. Recommendations in the recovery plan shall be implemented before construction activities can resume at the site where the paleontological resource(s) were discovered.

Significance after Mitigation

Implementation of Mitigation Measure CR-3 would reduce project-related impacts on unique paleontological resources to a level that is **less than significant with mitigation** because construction workers would be alerted to the possibility of encountering paleontological resources and, in the event that resources were discovered, fossil specimens would be recovered and recorded and would undergo appropriate curation.

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9 HYDROLOGY AND WATER QUALITY

INTRODUCTION

This chapter describes the regulatory and environmental setting for hydrology, drainage, and water quality at the project site, and identifies and analyzes impacts related to these resources from implementation of the proposed project. This chapter also includes an evaluation of flooding and potential adverse changes to groundwater conditions.

ENVIRONMENTAL SETTING

SURFACE WATER RESOURCES

The project region has a mild Mediterranean climate, with hot, dry summers and cool, wet winters. Most of the precipitation falls during the winter months, from November to April. The project site is located in the San Joaquin River Hydrologic Region, in the Upper Cosumnes River Watershed, which drains approximately 180 square miles of land in El Dorado, Amador, and Sacramento Counties. The Cosumnes River is approximately 150 feet north of the northwestern corner of the proposed project site. In the southern portion of the project site, the Cosumnes River is more than 0.5 mile west of the proposed project site. From State Route (SR) 16 north of the project site, the Cosumnes River drains to the southwest, eventually flowing under SR 99 into the Cosumnes River Preserve. The Cosumnes River drains southwest through the Preserve to Mokelumne City, where it joins with the Mokelumne River and enters the Sacramento–San Joaquin Delta.

The project site is gently rolling; elevations in the proposed project site range from approximately 103 to 146 feet above mean sea level (amsl). Most of the surface drainage in the proposed project site flows west and south off the project site into an approximately 16-acre pond. As described in detail in the *Aquatic Resources Delineation Report for the Sloughhouse Solar Project* (Dudek 2022a), there are a variety of surface waters features at the project site, including small ponds, intermittent drainages, freshwater emergent wetland, seasonal wetlands, vernal pools, ephemeral drainages, seasonal wetland swales, and upland swales. Most of these on-site surface water features drain to the off-site 16-acre pond. The 16-acre pond has a 42-inch outlet culvert, which continues southerly through adjacent parcels and eventually discharges into the Cosumnes River approximately 4,950 feet south of the project site (Baker-Williams Engineering Group 2022a).

There is no developed stormwater drainage system on the project site. Overland sheet flow carries stormwater generally towards the southwest.

SURFACE WATER QUALITY

Section 303(d) of the federal Clean Water Act (CWA) requires each state to periodically prepare a list of all surface waters in the state for which beneficial uses of the water are

impaired by pollutants. Beneficial uses for waters in the project region are contained in the *Water Quality Control Plan for the Sacramento-San Joaquin River Basins* (Basin Plan), adopted by the Central Valley Regional Water Quality Control Board (RWQCB) in 2019. Designated beneficial uses for the Cosumnes River (from the source to the Delta) consist of: municipal and domestic water supply, agricultural irrigation, agricultural stock watering, water-contact recreation, canoeing and rafting, other non-contact recreation, warm and cold freshwater habitat, warm and cold habitat for migration of aquatic organisms, warm and cold fish spawning habitat, and wildlife habitat (Central Valley RWQCB 2019). The Basin Plan also provides water quality objectives and standards for waters of the Sacramento River and San Joaquin River basins, including the Delta.

Section 303(d) of the CWA also requires states to identify waters where the permit standards, any other enforceable limits, or adopted water quality standards are still unattained. The law requires states to develop Total Maximum Daily Loads (TMDLs) to improve the water quality of impaired water bodies. TMDLs are the quantities of pollutants that can be safely assimilated by a water body without violating water quality standards. TMDLs are developed for impaired water bodies to maintain beneficial uses, achieve water quality objectives, and reduce the potential for future water quality degradation. National Pollutant Discharge Elimination System (NPDES) permits for water discharges (for both construction and operation) must take into account the pollutants for which a water body is listed as impaired. The Cosumnes River is listed as an impaired water body on the California CWA Section 303(d) list for indicator bacteria, invasive species, and toxicity; TMDL criteria are still being developed.

Flooding

The northwest corner of the project site is within the Cosumnes River/Deer Creek floodplain. As noted above, the Cosumnes River is approximately 150 feet to 0.5 mile north and west of the project site, respectively. Deer Creek is approximately 0.5 mile west of the project site. When the Cosumnes River floods, the floodplain spreads primarily to the west, merging with Deer Creek. The floodplain also spreads eastward, but for a shorter distance. Flood control levees are present along both the east and west sides of the Cosumnes River at the project site and in the project vicinity. These levees are privately owned and there is no formal maintenance schedule or maintenance agreement. The project site is located within an area where levees have been overtopped in the past by flood flows. In particular, flood flows in 1997 caused widespread levee breaches along the combined Cosumnes River/Deer Creek floodplain. In 1998, the U.S. Geological Survey (USGS) and the Federal Emergency Management Agency (FEMA) undertook a joint study to re-examine the potential for 100-year flooding between SR 16 at the Dillard Road bridge, downstream to SR 99 (which included the project site). This study resulted in the re-designation of areas along the Cosumnes River as a 100-year floodplain (including the northwest corner of the project site), and included modeling of the estimated floodwater surface elevations and flow velocities (USGS and FEMA 1998).

The most recent FEMA Flood Insurance Rate Map (FIRM) revised in 2018, situates the northwestern portion of the project site in Zone AE, which is a 100-year flood zone (1 percent annual exceedance probability [AEP]) where the base flood elevation has been

determined (Plate HWQ-1). The remainder of the project site is designated by FEMA as unshaded Zone X—an area of minimal flood hazard. The project site is not located within a 200- or 500-year floodplain as designated by FEMA, or a 100-year "Awareness Floodplain" as designated by the California Department of Water Resources (DWR 2022) (Plate HWQ-1).

Senate Bill (SB) 5 (2007) enacted the Central Valley Flood Protection Act of 2008 to provide additional protection for urban areas within the 200-year floodplain (0.5 percent annual exceedance probability). The Central Valley Flood Protection Board (CVFPB) is responsible for ensuring that appropriate standards are met for construction, maintenance, and protection of the flood control system. In the project area, the SB 5 requirements apply to the Cosumnes River and Deer Creek from the SR 99 bridge downstream to the Delta (which are CVFPB Regulated Streams), and the associated CVFPB Designated Floodway (also from the SR 99 bridge downstream to the Delta). Projects that are located within CVFPB's Designated Floodways or within 30 feet of the bank of a Regulated Stream require a CVFPB Encroachment Permit. As shown on Plate HWQ-1, the northwest corner of the project site is immediately adjacent to, but outside of, the eastern boundary of the CVFPB's Designated Floodway associated with Deer Creek and the Cosumnes River (DWR 2022).

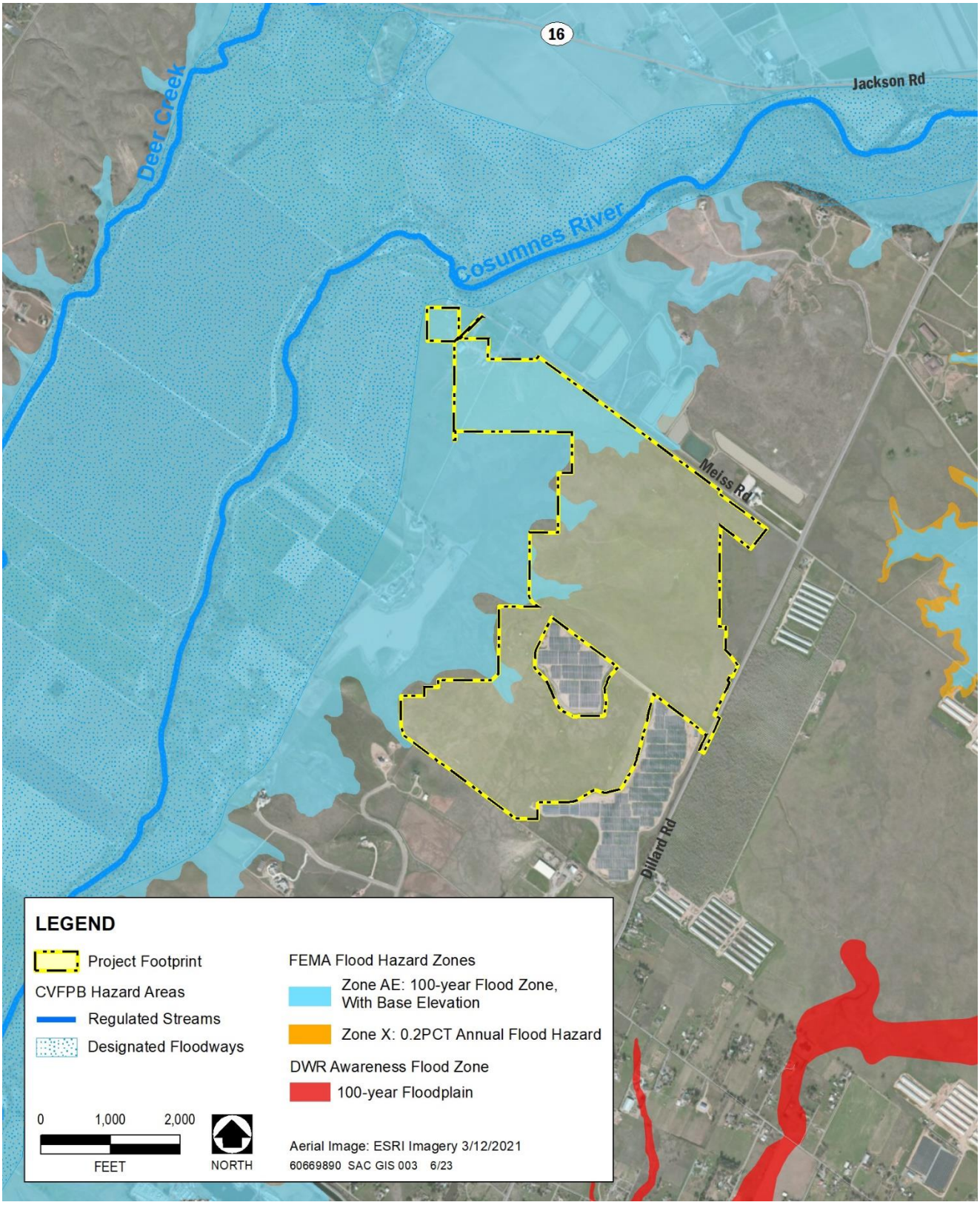
A seismic seiche causes standing waves to set up on rivers, reservoirs, ponds, and lakes when seismic waves from an earthquake pass through the area. Because they occur in an enclosed waterbody, standing waves continue to slosh back and forth over a period of time that may range from a few minutes to several hours. Given the long distance from the project site to active seismic sources (see the discussion of Geology, Seismicity, and Soils in Chapter 15, Summary of Impacts and their Disposition, for additional details), and the small size of nearby waterbodies, a seismic seiche at the off-site 16-acre pond or the Cosumnes River is unlikely.

A tsunami is an ocean wave usually created by undersea fault movement or by a coastal or submerged landslide. As the displaced water moves to regain equilibrium, waves are formed and radiate across the open water. When the waveform reaches the coastline, it quickly raises the water level, with accompanying high water velocities that can damage structures and sweep away objects and people. The project site is approximately 85 miles from the Pacific Ocean, and therefore tsunamis would not represent a hazard.

Erosion and Runoff Potential

Most soils can be categorized into hydrologic soil groups (which apply only to surface soil layers) based on runoff-producing characteristics. Hydrologic soil groups are factored into calculations of erosion potential when drainage plans are prepared. Based on a review of U.S. Natural Resources Conservation Service ([NRCS] 2021) soil data, all of the project site soils are classified as hydrologic Groups D and C, which consist of soils with a very high and high stormwater runoff potential, respectively.

Plate HWQ-1: Flood Zones



Sources: FEMA 2018, DWR 2022

Groundwater Resources

Groundwater Basin

A groundwater basin is defined as a hydrogeologic unit containing one large aquifer or several connected and interrelated aquifers. The project site is located in the San Joaquin Valley Groundwater Basin, Cosumnes Subbasin (DWR Basin No. 5-022.16). The Cosumnes Subbasin is bounded on the north and west by the Cosumnes River, on the south by the Mokelumne River, and on the east by consolidated bedrock of the Sierra Nevada mountain range. Groundwater in the Cosumnes Subbasin is contained within aquifers in three principal geologic formations: (1) recent (Holocene) Stream Channel and Floodplain Deposits; (2) Plio-Pleistocene-age Laguna, Riverbank, and Modesto Formations; and (3) the Miocene-age Mehrten Formation (DWR 2006).

Groundwater Quality and Subsidence

Limited groundwater quality data is available for the Cosumnes Subbasin. After obtaining the publicly available groundwater quality datasets and performing a statistical analysis, EKI Environment & Water (EKI 2021) found that arsenic and nitrate are the only two constituents of concern in the Cosumnes Subbasin. EKI (2021) found that most well samples that exceeded the primary or secondary drinking water maximum contaminant levels and statistically significant upward trends were found at monitoring wells which do not provide water for beneficial use and are located at sites regulated by the RWQCB around the City of Galt. There are also three point-source sites in the City of Galt and one site the City of Ione where there is existing groundwater contamination from previous land uses. There are no records of impaired groundwater quality in the project vicinity. In summary, groundwater within the Cosumnes Subbasin is generally considered to be of good quality.

Land subsidence from groundwater withdrawal has not historically represented a hazard in the Cosumnes Subbasin. Measured subsidence from 2015 through 2020 was approximately 0.05 feet during this 6-year period (EKI 2021), indicating that subsidence from groundwater withdrawal does not represent a hazard.

Sustainability

The Sustainable Groundwater Management Act (SGMA) and corresponding regulations require that each groundwater basin designated as a “high” or “medium” priority be operated to a sustainable yield, balancing natural and artificial groundwater recharge with groundwater use. Groundwater agencies located within high- or medium-priority basins were required to adopt groundwater sustainability plans by January 31, 2020 (if the basin was determined by DWR to be in a condition of critical overdraft), or by January 31, 2022 for all other high- and medium-priority basins. The Cosumnes Subbasin is not in a state of overdraft, and is classified as a medium-priority basin (DWR 2020).

The Groundwater Sustainability Agency (GSA) for the Cosumnes Subbasin is composed of the Omochumne-Hartnell Water District, Sloughhouse Resource Conservation District, Galt Irrigation District, Clay Water District, City of Galt, Amador County Groundwater

Management Authority, and Sacramento County. The GSA is responsible for monitoring groundwater conditions, complying with SGMA requirements, and coordinating with other agencies and entities (e.g., public water systems, etc.) to achieve sustainability. The powers granted to GSAs under the SGMA to effect sustainable groundwater management are generally limited to managing the quantity, location, and timing of groundwater pumping and recharge.

A Groundwater Sustainability Plan (GSP) for the Cosumnes Subbasin has been prepared (EKI 2021), and was submitted to DWR for approval in 2022 as required by the SMGA. Groundwater hydrographs[1] indicate that water levels in the Cosumnes Subbasin have generally declined over the available period of record, with an average decline of approximately 0.6 feet per year. EKI (2021) modeled several different sustainable yield scenarios, including existing conditions, projected conditions, and projected conditions in 2070 under several drought situations caused by extreme warming as a result of climate change. Under current conditions and assuming a repeat of the last 50 years of hydrologic conditions, model results indicate there will be an average annual decrease in groundwater storage of 400 acre-feet per year (AFY) and a projected sustainable yield of 127,500 AFY (EKI 2021:155). Modeling results from the future projected conditions scenario indicate there will be an average annual decrease in groundwater storage of 1,700 AFY and a projected sustainable yield of 126,600 AFY (EKI 2021:167). However, if future climatic conditions are drier than the past 50 years, the sustainable yield decreases and the likelihood of SGMA-specified “Undesirable Results” can increase. The sustainable yield is sensitive to climatic conditions, and the Cosumnes Subbasin experiences storage decreases during dry periods and storage increases during wet periods. Therefore, the sustainable yield is substantially influenced by the consumption of extracted groundwater and the climatic averaging period. Modeling results for extended drought with extreme warming through the year 2070 indicate there will be a decrease in groundwater storage of 10,000 AFY and a projected sustainable yield of 127,300 AFY (EKI 2021:167).

Because future climatic conditions are difficult to project, and could result in greater reliance of groundwater storage to balance the water budget, actions in the Cosumnes Basin that reduce groundwater consumption (demand reduction) and increase recharge will support long-term groundwater sustainability. The GSP includes specific Projects and Management Actions (PMAs) that are proposed to achieve the sustainability goal (i.e., managing groundwater within the subbasin's sustainable yield) within the Cosumnes Subbasin. The PMAs include direct overland recharge, recharge through augmentation of Cosumnes River streamflows, reduction of groundwater pumping through the use of tertiary-treated wastewater, reduction of groundwater pumping through voluntary fallowing of agricultural land (with associated monetary compensation), and groundwater banking. EKI (2021:168) modeled the potential effects from implementation of the proposed PMAs, and the results indicate that there will be a groundwater storage *increase*

[1] A hydrograph is a graph or plot that shows the rate of water flow in relation to time, given a specific point or cross section. These graphs are often used to evaluate stormwater runoff on a particular site considering a development project.

of 7,100 AFY over time. The increased amount of groundwater storage resulting from implementation of the PMAs will support the future sustainable yield of the subbasin.

REGULATORY SETTING

FEDERAL

CLEAN WATER ACT

The CWA (33 U.S.C. Section 1251 et seq.) is the primary federal law that governs and authorizes water quality control activities by the U.S. Environmental Protection Agency (EPA), the lead federal agency responsible for water quality management. By employing a variety of regulatory and non-regulatory tools, including establishing water quality standards, issuing permits, monitoring discharges, and managing polluted runoff, the CWA seeks to restore and maintain the chemical, physical, and biological integrity of surface waters to support the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water.

EPA is the federal agency with primary authority for implementing regulations adopted pursuant to the CWA, and has delegated the State of California as the authority to implement and oversee most of the programs authorized or adopted for CWA compliance through the Porter-Cologne Water Quality Control Act of 1969 described below.

WATER QUALITY CRITERIA AND STANDARDS

Pursuant to federal law, EPA published water quality regulations under Volume 40 of the Code of Federal Regulations (CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question, and (2) criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. Section 303(d) requires states to develop lists of the water bodies and associated pollutants that exceed water quality criteria.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT PROGRAM, SECTION 402

The NPDES permit program was established as part of the CWA to regulate municipal and industrial discharges to surface waters of the U.S. Federal NPDES permit regulations have been established for broad categories of discharges, including point source municipal waste discharges and nonpoint source stormwater runoff. NPDES permits generally identify limits on the concentrations and/or mass emissions of pollutants in effluent discharged into receiving waters; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

More specifically, the discharge prohibitions and limitations in an NPDES permit for wastewater treatment plants are designed to ensure the maintenance of public health and safety, protection of receiving water resources, and safeguarding of the water's designated beneficial uses. Discharge limitations typically define allowable effluent quantities for flow, biochemical oxygen demand, total suspended matter, residual chlorine, settleable matter, total coliform, oil and grease, pH, and toxic pollutants. Limitations also typically encompass narrative requirements regarding mineralization and toxicity to aquatic life.

In November 1990, EPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase I of the permitting program applied to municipal discharges of stormwater in urban areas where the population exceeded 100,000 persons.[2] Phase II of the NPDES stormwater permit regulations became effective in March 2003 and required NPDES permits be issued for construction activity for projects that disturb between one and five acres. Phase II of the municipal permit system (i.e., known as the NPDES General Permit for Small Municipal Separate Storm Sewer Systems [Small MS4s], Order No. 2003-0005-DWQ as amended by 2013-0001-DWQ) required small municipality areas of less than 100,000 persons (hereinafter called Phase II communities) to develop stormwater management programs.

California's RWQCBs are responsible for implementing the NPDES permit system (refer to additional details in the subsection "State Regulations," below).

SECTION 401 WATER QUALITY CERTIFICATION OR WAIVER

Under Section 401 of the CWA, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the U.S.) must first obtain a certificate from the appropriate agency stating that the fill is consistent with the State's water quality standards and criteria. In California, the authority to either grant water quality certification or waive the requirements is delegated by the State Water Resources Control Board (SWRCB) to the nine regional boards. Water quality in Sacramento County, including the project site, is under the jurisdiction of the Central Valley RWQCB.

SECTION 303(D) IMPAIRED WATERS LIST

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that would not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a TMDL for each of the listed pollutants. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. EPA must either approve a TMDL prepared by the state or disapprove the State's TMDL and issue its own. NPDES permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. The goal of the TMDL program is that, after implementation of a

[2] Phase I also applies to storm water discharges from a large variety of industrial activities, including general construction activity if the project would disturb more than 5 acres.

TMDL for a given pollutant on the 303(d) list, the causes that led to the pollutant's placement on the list would be remediated.

Federal Antidegradation Policy

The Federal Antidegradation Policy (40 CFR 131.12) is designed to protect existing water uses, water quality, and national water resources. The federal policy directs states to adopt a statewide policy to protect and maintain water quality for existing in-stream uses and waters of exceptional recreational or ecological significance.

Federal Emergency Management Agency National Flood Insurance Program

The FEMA administers the National Flood Insurance Program (NFIP, 42 U.S.C. 4016[a]) to provide flood insurance to individuals within communities that adopt and enforce NFIP regulations that limit development in floodplains; federally-backed flood insurance is only available within NFIP communities. FEMA also develops and issues FIRMs that identify which land areas are subject to flooding. Flood hazard zones in the community are identified within the FIRMs, at the minimum, for the 1-in-100 annual exceedance probability flood event and sometimes other flood events. The design standard for flood protection covered by the FIRMs is established by FEMA with the minimum level of flood protection for new development determined to be the 1-in-100 AEP (i.e., the 100-year flood event). As developments are proposed and constructed, FEMA is also responsible for issuing revisions to FIRMs, such as Conditional Letters of Map Revision (CLOMR) and Letters of Map Revision (LOMR) through the local agencies that work with the National Flood Insurance Program.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) of 1969 is California's statutory authority for the protection of water quality. Under the Act, the State must adopt water quality policies, plans, and objectives that protect the State's waters for the use and enjoyment of the people. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The RWQCBs are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. The Porter-Cologne Act sets forth the obligations of the SWRCB and RWQCBs to adopt and periodically update the basin plans. The Central Valley RWQCB regulates water quality in Sacramento County, including the project site.

Basin plans are the regional water quality control plans required by both the CWA and Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The act also requires waste dischargers to notify the RWQCBs of such activities through the filing of Reports of Waste Discharge (RWD) and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements (WDRs), NPDES permits, CWA Section 401 water quality certifications, or other approvals. The RWQCBs also have authority to issue

waivers to RWD requirements and WDRs for broad categories of “low threat” discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions.

State Water Resources Control Board

SWRCB and its nine RWQCBs administer water rights and enforce pollution control standards throughout the state. SWRCB is responsible for granting of water right permits and licenses through an appropriation process following public hearings and appropriate environmental review by applicants and responsible agencies. In granting water right permits and licenses, SWRCB must consider all beneficial uses, including water for downstream human and environmental needs. In addition to granting the water right permits needed to operate new water supply projects, SWRCB also issues water quality-related certifications to developers of water projects under Section 401 of the CWA.

Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Basin Plan)

The Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins (Central Valley RWQCB 2019) identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Sacramento and San Joaquin hydrologic regions. State and federal laws mandate protecting designated “beneficial uses” of water bodies. State law defines beneficial uses as “domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves” (Water Code Section 13050[f]).

The beneficial uses of any specifically identified water body generally apply to all tributary streams to that water body. Those water bodies not specifically designated for beneficial uses in the Basin Plan are assigned the Municipal and Domestic Supply (MUN) use, in accordance with the State Water Board Resolution No. 88-63. Although specific surface waters have not been identified for groundwater recharge or freshwater replenishment in the Basin Plan, these additional protected beneficial uses are designated in the Basin Plan. Unless otherwise designated by the Central Valley RWQCB, all groundwater is considered suitable or potentially suitable for municipal or domestic water supply (MUN).

The Basin Plan describes a set of designated beneficial uses for each water body. Beneficial uses help to define the resources, services, and qualities of the aquatic systems. Beneficial uses also serve as a basis for establishing water quality objectives and discharge prohibitions. The Basin Plan contains specific numeric water quality objectives that are applicable to each water body or portions of water bodies. Objectives have been established for bacteria, dissolved oxygen, pH, pesticides, electrical conductivity, total dissolved solids, temperature, turbidity, and trace elements. Numerous narrative water quality objectives have also been established. Finally, the Basin Plan contains a set of implementation plans, which represent the Central Valley RWQCB’s programs and specific plans of action for meeting water quality objectives and protecting beneficial uses.

National Pollutant Discharge Elimination System Permit System

Waste Discharge Requirements for Construction

The SWRCB's statewide stormwater general permit for construction activity (Order WQ 2022-0057-DWQ, NPDES Permit No. CAS000002) is applicable to all construction activities that would disturb one acre of land or more (SWRCB 2022). Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters.

Through the NPDES and WDR process, SWRCB seeks to ensure that the construction and post-construction conditions at a project site do not cause or contribute to direct or indirect impacts on water quality (i.e., pollution and/or hydromodification) upstream and downstream. To comply with the requirements of the Construction General Permit, project applicants must file a notice of intent with the SWRCB to obtain coverage under the permit; prepare a Storm Water Pollution Prevention Plan (SWPPP); and implement inspection, monitoring, and reporting requirements appropriate to the project's risk level as specified in the SWPPP. The SWPPP includes a site map, describes construction activities and potential pollutants, and identifies Best Management Practices (BMPs) that would be employed to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources, such as petroleum products, solvents, paints, and cement. Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of post-construction permanent BMPs that will remain in service to protect water quality throughout the lifespan of the project. All NPDES permits also have inspection, monitoring, and reporting requirements.

Senate Bill (SB) 5

SB 5 enacted the Central Valley Flood Protection Act of 2008. SB 5 required DWR and the CVFPB to prepare and adopt a Central Valley Flood Protection Plan (CVFPP) by 2012. The Plan was prepared by DWR and adopted in 2012, and was updated in 2017 (DWR 2017). SB 5 established a 200-year flood (0.5 percent annual exceedance probability) as the minimum urban level of flood protection. It also required cities and counties in the Central Valley to amend their general plans and their zoning ordinances to conform to the Plan.

Under California Water Code sections 8534, 8608 and 8710–8723, the CVFPB is required to enforce, within its jurisdiction, on behalf of the State, appropriate standards for construction, maintenance, and protection of adopted flood control plans that will best protect the public from floods. CVFPB's jurisdiction includes the entire Central Valley, including all tributaries and distributaries of the Sacramento and San Joaquin Rivers and the Tulare and Buena Vista basins.

SB 5 restricts approval of development agreements and subdivision maps in CVFPP flood hazard zones, unless certain findings are made. Any project within 30 feet of a CVFPB Regulated Stream or within a CVFPB Designated Floodway must first obtain an encroachment permit. Permit applications are reviewed by the CVFPB (together with the U.S. Army Corps of the Engineers and local floodplain authorities, as applicable), which must make a determination that the proposed encroachment would not impede flood flows, and would not increase downstream flooding (i.e., would not substantially increase downstream water surface elevations) prior to issuance of a permit. During the CVFPB permit application process, additional materials such as a hydraulic study, may be required. With 200-year flood zones designated by the CVFPB, development is subject to the *Urban Level of Flood Protection Criteria* developed by DWR (DWR 2013).

Sustainable Groundwater Management Act

In 2014, the California Legislature enacted a three-bill law (Assembly Bill 1739, SB 1168, and SB 1319), known as the SGMA. The SGMA was created to provide a framework for the sustainable management of groundwater supplies, and to strengthen local control and management of groundwater basins throughout the state with little state intervention. The SGMA is intended to empower local agencies to adopt groundwater sustainability plans that are tailored to the resources and needs of their communities, such that sustainable management would provide a buffer against drought and climate change, and ensure reliable water supplies regardless of weather patterns. The SGMA and corresponding regulations require that each high- and medium-priority groundwater basin is operated to a sustainable yield, balancing natural and artificial groundwater recharge with groundwater use to ensure undesirable results such as chronic lowering of groundwater levels, loss of storage, water quality impacts, land subsidence, and impacts to hydraulically connected streams do not occur. The SGMA is considered part of the statewide, comprehensive California Water Action Plan that includes water conservation, water recycling, expanded water storage, safe drinking water, and wetlands and watershed restoration. The SGMA protects existing surface water and groundwater rights and does not affect current drought response measures.

California's 515 groundwater basins are classified into one of four categories; high-, medium-, low-, or very low-priority based on components identified in the California Water Code Section 10933(b). Basin priority determines which provisions of California Statewide Groundwater Elevation Monitoring (CASGEM) and the SGMA apply in a basin.

The SGMA requires that local agencies form one or more GSAs within two years (i.e., by June 30, 2017). Agencies located within high- or medium-priority basins were required to adopt GSPs by January 31, 2020 or January 31, 2022, respectively.[3] Local agencies will have 20 years to fully implement GSPs after the plans have been adopted. Intervention by the SWRCB would occur if a GSA is not formed by the local agencies, and/or if a GSP is not adopted or implemented.

[3] Unless the local agency has submitted an Alternative as defined in the SGMA which has been approved by DWR.

The SGMA requires local agencies to develop and implement groundwater sustainability plans in high- and medium-priority groundwater basins throughout the State of California. Groundwater sustainability plans are not required for low- or very low-priority basins. The Cosumnes Subbasin is a medium-priority basin. A GSP for the Cosumnes Subbasin has been prepared (EKI 2021), and has been submitted to DWR for approval. DWR accepted public comments on the plan (as required by the SGMA) through April 2022.

Irrigated Lands Regulatory Program

A variety of pollutants can be found in runoff from irrigated lands, such as pesticides, fertilizers, salts, pathogens, and sediment. At high enough concentrations, these pollutants can harm aquatic life or make water unusable for drinking water or agricultural uses. The Irrigated Lands Regulatory Program (ILRP) was initiated in 2003 to prevent agricultural runoff from impairing surface waters, and in 2012 groundwater regulations were added to the program. WDRs, which protect both surface water and groundwater, address irrigated agricultural discharges throughout the Central Valley. The ILRP applies to commercial cropland that is "irrigated land"[4] (irrigated either by surface water or groundwater), and which is not covered by another separate Central Valley RWQCB order (Central Valley RWQCB 2021).

Local

Sacramento County General Plan

The *Sacramento County General Plan of 2005–2030* (Sacramento County 2011, as updated in 2017 and 2019) includes the following policies related to hydrology and water quality that apply to the proposed project.

Agricultural Element

AG-27. The County shall actively encourage groundwater recharge, water conservation, and water recycling by both agricultural and urban water users.

AG-28. The County shall actively encourage conservation of soil resources.

AG-29. The County shall minimize flood risks to agricultural lands resulting from new urban developments by:

- Requiring that such developments incorporate adequate runoff control structures; and/or
- Assisting implementing comprehensive drainage management plans to mitigate increased risks of farmland flooding resulting from such developments.

[4] Land irrigated to produce crops or pasture for commercial purposes, including lands that are planted to commercial crops that are not yet marketable (e.g., vineyards and tree crops). Irrigated lands also include nurseries, and privately and publicly managed wetlands.

CONSERVATION ELEMENT

CO-7. Support the Water Forum Agreement Groundwater Management Element. Prior to approving any new development, a water supply plan shall be approved that demonstrates consistency with an adopted groundwater management plan.

CO-8. Applicants proposing developments in areas with significant groundwater recharge characteristics shall evaluate the impact of said development on groundwater recharge and quality. This evaluation should recognize criteria defined in any broader Countywide determination and/or evaluation of groundwater recharge areas.

CO-15. Support effective agricultural water conservation practices, including the use of recycled wastewater where financially feasible.

CO-23. Development approval shall be subject to a finding regarding its impact on valuable water-supported ecosystems.

CO-25. Support the preservation, restoration, and creation of riparian corridors, wetlands and buffer zones.

CO-26. Protect areas susceptible to erosion, natural water bodies, and natural drainage systems.

CO-28. Comply with other water quality regulations and NPDES permits as they apply to County projects or activities, such as the State's Construction General Permit and Aquatic Pesticides Permit.

CO-30. Require development projects to comply with the County's stormwater development/design standards, including hydromodification management and low impact development standards, established pursuant to the NPDES Municipal Permit. Low impact development design and associated landscaping may serve multiple purposes including reduction of water demand, retention of runoff, reduced flooding, and enhanced groundwater recharge.

CO-31. Require property owners to maintain all required stormwater measures to ensure proper performance for the life of the project.

CO-33. Support an adequate and reliable Municipal and Industrial (M&I) water supply for development.

CO-35. New development that will generate additional water demand shall not be approved and building permits shall not be issued if sufficient water supply is not available, as demonstrated by a Water Supply Assessment and Written Verification processes.

CO-53. Encourage BMPs and appropriate soil conservation practices regularly utilized by farmers and ranchers.

CO-71. Development design shall help protect natural resources by:

- Minimizing total built development in the floodplain, while designing areas of less frequent use that can support inundation to be permitted in the floodplain.

CO-93. Discourage fill in the 100-year floodplain.

CO-94. Development within the 100-year floodplain and designated floodway of Sacramento streams, sloughs, creeks or rivers shall be:

- Consistent with policies to protect wetlands and riparian areas; and
- Limited to land uses that can support seasonal inundation.

CO-95. Development within the 100-year floodplain should occur in concert with the development of the Floodplain Protection Zone.

CO-103. Protect the Cosumnes River Corridor by promoting the preservation of agriculture, natural habitat, and limited recreational uses adjacent to the river channel, and when feasible by acquiring appropriate lands or easements adjacent to the river.

CO-105a. Encourage flood management designs that respect the natural topography and vegetation of waterways while retaining flow and functional integrity.

CO-107. Maintain and protect natural function of channels in developed, newly developing, and rural areas.

CO-112. The use of concrete and impervious materials is discouraged where it is inconsistent with the existing adjacent watercourse and overall ecological function of the stream.

CO-113. Encourage revegetation of native plant species appropriate to natural substrate conditions and avoid introduction of nonindigenous species.

CO-114. Protect stream corridors to enhance water quality, provide public amenities, maintain flood control objectives, preserve and enhance habitat, and offer recreational and educational opportunities.

CO-116. Encourage filter strips using appropriate native vegetation and substrate along riparian streambanks adjacent to irrigated croplands.

CO-118. Development adjacent to waterways should protect the water conveyance of the system, while preserving and enhancing the riparian habitat and its function.

CO-123. The use of native plant species shall be encouraged on revegetation plans.

CO-126. Prohibit obstruction or underground diversion of natural waterways.

SAFETY ELEMENT

SA-5. A comprehensive drainage plan for major planning efforts shall be prepared for streams and their tributaries prior to any development within the 100-year floodplain, and/or the 200-year floodplain in areas subject to the Urban Level of Flood Protection, defined by full watershed development without channel modifications. The plan shall:

a. Determine the elevation of the future 100-year flood, and/or the 200-year flood in areas subject to the Urban Level of Flood Protection, associated with planned and full development of the watershed;

b. Determine the boundaries of the future 100-year floodplain, and/or the 200-year floodplain in areas subject to the Urban Level of Flood Protection, for both flood elevations (planned and full development) based on minimum 2-foot contour intervals;

c. Assess the feasibility of gravity drainage into the existing flowline of the stream;

d. Assess the feasibility of alternative means of drainage into the stream;

e. Identify potential locations for sedimentation ponds and other stormwater treatment facilities;

f. Determine practical channel improvements and/or detention basins to provide the flood control needs of the proposed development;

g. Determine the location and extent of marsh, vernal pool and riparian habitat;

h. Develop measures for protecting and mitigating natural habitat;

i. Develop measures for protecting and mitigating for federal and state-listed endangered species;

j. Develop and ensure implementation of measures that would reduce vector larvae;

k. Identify appropriate plant species to be included as part of the natural features of the comprehensive drainage plan.

SA-14. The County shall require, when deemed to be physically or ecologically necessary, all new urban development and redevelopment projects to incorporate runoff control measures to minimize peak flows of runoff and/or assist in financing or otherwise implementing Comprehensive Drainage Plans.

SA-15. The County shall regulate, through zoning and other ordinances, land use and development in all areas subject to potential flooding and prohibit urban uses on unprotected flood land.

SA-22a. Sacramento County will evaluate development projects and all new construction located within a defined Flood Hazard Zone (FHZ) to determine whether the 200-year Urban Level of Flood Protection or 100-year FEMA flood protection applies, and whether the proposed development or new construction is consistent with that standard. Prior to approval of development projects or new construction subject to either standard, the appropriate authority must make specific finding(s) related to the following:

a. Urban Level of Flood Protection standard (200-year) applies to projects in a Flood Hazard Zone that meet certain criteria, developed by the State of California Department of Water Resources, related to urbanization, watershed size, and potential flood depth.

b. Federal Emergency Management Agency (FEMA) standard of protection (100-year) applies to projects in a Special Flood Hazard Area that are not subject to the Urban Level of Flood Protection.

SA-22b. New development shall be elevated as required by the applicable flood standards (100-year, or 200-year in areas subject to the Urban Level of Flood Protection) and should be constructed to be resistant to flood damage consistent with the Floodplain Management Ordinance.

Sacramento County Land Grading and Erosion Control Ordinance

Sacramento County Municipal Code Title 16, Chapter 16.44, was enacted to minimize water quality degradation, minimize damage to and disruption of drainage flows, and to comply with the County's NPDES MS4 Permit. A Grading and Erosion Control Permit from the County is required if a project involves grading, filling, excavation, storage, or disposal of 350 cubic yards or more of soil or other earthen material, or if a project requires clearing and grubbing of one acre or more of land. Agricultural cropland is exempt from this requirement. The permit application must include copies of all applicable state and federal permits (such as CWA Section 404 permits for fill of wetlands), and proposed grading plans that include the following information (among other requirements):

- location of all watercourses, wetlands, and drainage systems;
- location of all roads and structures;
- proposed grading, slopes, and elevation shown by contours;
- quantity of material to be excavated;
- location, implementation schedule, and maintenance schedule of all erosion control measures and sediment control measures to be implemented or constructed prior to, during, or after the proposed activity;
- description of measures designed to control dust and stabilize the construction site road and entrance; and
- description of the location and methods of storage and disposal of construction materials.

Sacramento County Floodplain Management Ordinance

Sacramento County Municipal Code Title 16, Chapter 16.02, Section 16.02.060 (Ordinance SZC-2016-0023) requires a Floodplain Management Permit for any new construction, substantial improvements, or alteration of land within a special flood hazard area (FEMA Zones A, AO, Al-A30, AE, A99, AH, or AR). These standards control filling, grading, and other development which may increase flood damage; and are intended to prevent or regulate the construction of flood barriers that would unnaturally divert flood waters or which may increase flood hazards in other areas. Per Ordinance SZC-2016-0023, Section 905-01, a project applicant must apply for a development permit for construction in a FEMA flood zone, and approval by the County's floodplain administrator is required. The permit application must include plans showing elevations of proposed structures and the elevations of areas proposed for materials and equipment storage; the proposed elevation in relation to mean sea level, of the lowest floor of all structures; the proposed elevation in relation to mean sea level to which any structure will be floodproofed; the location, volume, and depth of proposed fill and excavation within the

100-year floodplain and floodway; and a description of the extent to which any watercourse will be altered or relocated as a result of project development.

Per Ordinance SZC-2016-0023, Section 906-05, commercial solar power plants are treated as development (governed by Section 906-06), and any structures or electrical panels for such facilities must be elevated or floodproofed at least 1.5 feet above the base flood elevation, and designed and anchored in accordance with the standards of Section 906-06. A declaration of land use restriction in a format approved by County Counsel must be recorded if any part of the commercial solar development will be lower than 1.5 feet above the base flood elevation.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

Based on Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact related to hydrology and water quality if it would:

- violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
  - i) result in substantial erosion or siltation on- or off-site;
  - ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
  - iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
  - iv) impede or redirect flood flows;
- in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
- conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

ISSUES NOT DISCUSSED FURTHER

Risk Release of Pollutants from Inundation in a Tsunami, Seiche, or Flood Hazard Zone—The project site is not located in a tsunami or seiche hazard zone. Temporary construction staging areas and construction trailers would be located outside of the FEMA

100-year floodplain. Once constructed, the proposed substation, and battery storage buildings, along with most of the solar panels, access roads, and fencing would be outside of the FEMA 100-year floodplain. The proposed solar panels would be anchored in stable geologic formations via steel piers to resist flood flows, and there would be no buildings or other structures that would use or store chemicals or other pollutants within the FEMA 100-year floodplain. Thus, there would be no risk for release of pollutants from inundation in a tsunami, seiche, or flood hazard zone, and there would be **no impact.** This issue is not addressed further in this EIR.

IMPACT HWQ-1: VIOLATE WATER QUALITY STANDARDS OR SUBSTANTIALLY DEGRADE SURFACE OR GROUNDWATER QUALITY

Buildout of the proposed project site would convert approximately 380 acres of undeveloped land used for year-round cattle grazing to solar facility uses and spring grazing, resulting in a change in the types of pollutants, and a potential change in the amount of pollutants, to receiving water bodies. Pollutants from new development could result in adverse changes to the water quality of local water bodies and could conflict with the Basin Plan. The proposed project would result in a substantial reduction in pollutants generated by livestock grazing because fewer animals would be grazed over a much shorter time period on-site. Furthermore, as detailed in the discussion that follows, with implementation of grading, erosion control, and municipal and industrial stormwater pollutant laws, regulations, and permit conditions; implementation of BMPs related to project construction and operation; and compliance with federal and state programs related to agricultural grazing, the water quality impacts would be **less than significant.**

PROPOSED SOLAR FACILITIES

For the proposed project, approximately 380 acres of existing livestock grazing land would be developed to accommodate solar facilities.

As indicated previously in the Environmental Setting, the Cosumnes River, which ranges from approximately 150 feet to 0.5 mile north and west of the project site, is included on the SWRCB's 303(d) list of impaired water bodies for indicator bacteria, invasive species, and toxicity (SWRCB 2021a). Furthermore, there are a variety of surface water features on the project site, some of which have been determined to be jurisdictional wetland features (Dudek 2022a). Most of these surface water features drain to the southwest into an approximately 16-acre off-site pond. The pond functions as a retention basin intended primarily for stock watering; therefore, stormwater drainage that flows into the pond is retained until it is used by livestock or eventually evaporates. The off-site, 16-acre pond is equipped with a 42-inch outlet that discharges into a culvert, which ultimately discharges into the Cosumnes River nearly one mile downstream, primarily during the winter rainy season if the pond approaches capacity (in order to prevent flooding).

Construction activities, including excavating and grading associated with cuts-and-fills along with building foundations and roads, would disturb sediment that could be transported in stormwater runoff during the winter rainy season. In addition, disturbed sediment could be transported via wind, particularly during the summer months.

Sediments, in addition to being contaminants in their own right, transport other contaminants, such as trace metals, nutrients, and hydrocarbons that adsorb to suspended sediment particles. Buildout of the project site would affect long-term water quality by adding impervious surfaces and adding additional urban stormwater runoff. New development has the potential to alter the types, quantities, and timing of contaminant discharges in stormwater runoff. Changes to a more developed state, if not properly managed, can adversely affect water quality.

Long-term operational discharges of urban contaminants into the stormwater drainage system and ultimate receiving waters could increase with the buildout of the proposed project site, compared to existing conditions, as a result of new impervious surfaces (i.e., battery storage buildings [which are assumed to include offices but no permanent restrooms] and the electrical substation). In addition, the presence of uses that use potential pollutants (e.g., solar panel cleaning agents, pesticides, oil) could result in discharges if there is improper storage, application, and/or disposal. As noted previously, most of the project site soils have a slow to very slow permeability rate and therefore have a correspondingly high to very high stormwater runoff potential (i.e., Hydrologic Group C and D soils). New impervious surfaces associated with the proposed solar facilities could result in an associated increase in urban stormwater runoff, which could be a source of surface water pollution. Water quality degradation can interfere with Basin Plan implementation and with achievement of TMDL objectives required by the CWA, and can adversely affect wetland ecosystems, and sensitive plant and animal species, as well as humans.

Several existing regulations would apply to the proposed project site that would reduce or avoid impacts related to erosion, sedimentation, and water quality degradation. To receive a building permit from the County, a grading and erosion control plan must be submitted to the Engineering Department that must incorporate stormwater pollution control, as well as storm drainage design features to control increased runoff from the project site. As described under the Regulatory Setting section above, the County's Land Grading and Erosion Control Ordinance requires implementation of erosion and sediment control BMPs to protect receiving water quality, which includes both surface water and groundwater. Groundwater quality can be affected either by direct contact during construction-related earthmoving activities, or by indirect contact as a result of percolation of stormwater. Earthmoving activities that could encounter groundwater are issued permits by the Central Valley RWQCB through the project-specific permitting process; the permits contain provisions (in form of permit terms and conditions) that are specifically intended to protect groundwater quality. Protection of surface water and groundwater quality from stormwater percolation is accomplished through implementation of the NPDES permit (discussed below).

Projects that disturb more than one acre of land during the construction process must comply with the requirements in the SWRCB General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order WQ 2022-0057-DWQ, NPDES Permit No. CAS000002 [Construction General Permit]). Through the NPDES and WDR process, SWRCB seeks to ensure that the construction and post-construction conditions at a project site do not cause or contribute to direct or indirect

impacts on water quality. The Construction General Permit requires preparation and implementation of a SWPPP with associated BMPs that are specifically designed to reduce construction-related erosion, sedimentation, and pollutant transport. The Construction General Permit includes a numeric, two-part, risk-based analysis process. It also identifies the need to address changes in the hydrograph, defined as hydrograph modification or hydromodification, which could result from urbanization of a watershed, and requires LID controls to more closely mimic the pre-developed hydrologic condition. Examples of BMPs for erosion and sediment control relating to construction activities and stormwater runoff that could be implemented include mulch, re-seeding, straw wattles, check dams, sediment traps, silt fencing, sediment basins, placement of rip rap under drain outfalls, and stabilizing construction entrances and exits.

Long-term water quality impacts must be reduced using site design and source control measures to help keep pollutants out of stormwater. In addition, industrial facilities require appropriate NPDES permits/WDRs, and implementation of BMPs consistent with the California Stormwater Quality Association (CASQA) *Industrial/Commercial BMP Handbook* (CASQA 2019) or its equivalent, including annual reporting of any structural control measures and treatment systems. The project is required to implement Sacramento County storm drainage requirements including water quality features as specified in the *Sacramento Region Stormwater Quality Design Manual* (Sacramento County et al. 2018). In conclusion, compliance with the above-listed laws, regulations, ordinances, and permit terms would require the project to reduce pollutants in construction and operational stormwater runoff generated in the proposed project site through implementation of operation-related LID technologies, BMPs, and pollutant source control measures, along with preparation of a SWPPP with associated BMPs designed to control construction-related erosion and pollutants. These measures would protect water quality as required by the Basin Plan. Therefore, the project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, and this impact would be **less than significant**.

Proposed Agricultural Operations

Most of the approximately 380-acre project site has been in use as grazing land since at least the 1930s. Portions of the site have also been used for irrigated pasture, and for alfalfa hay that provides livestock feed. At the conclusion of construction activities, the area around the solar panels would be re-seeded and would be grazed in the spring around the solar panels. The project site would no longer be used for year-round cattle grazing. As described previously, a variety of surface water features are present throughout the project site, most of which discharge to an off-site, 16-acre retention pond. Spring grazing is proposed at the project site during project operation. Livestock grazing can have adverse effects on water quality from fecal bacterial contamination (such as *E. coli*) and nutrient over enrichment (particularly nitrogen from urine and feces). In addition, if pastures are grazed too heavily, a loss of plant matter can occur and the soil can become compacted from trampling, both of which may result in increased erosion and sediment transport. When properly implemented, BMPs as recommended by local soil and water conservation districts, cooperative agricultural extension services such as U.C.

Rangelands, and the U.S. and California NRCS, can substantially reduce the potential for water quality degradation. These BMPs fall under several broad categories, including balancing stocking rates with forage production, distributing grazing and waste across the landscape, managing fertilizer and pesticide applications, and installing fencing to keep livestock away from riparian zones (SWRCB 2021b).

The SWRCB, California Coastal Commission (CCC), and other state agencies have identified management measures to address agricultural non-point source (NPS) pollution of State waters, related to erosion and sediment control, animal waste, nutrient management, pest and weed management, grazing management, and irrigation water management. The management measures consist of a suite of plans, practices, technologies, operating methods, or other alternatives that may be used in combination to control NPS pollution. Associated with each management measure are management practices that are designed to reduce the quantities of pollutants entering receiving waters. Programs established to control NPS pollution from agriculture in California include joint efforts by local, State, and federal agencies. The SWRCB and the CCC oversee the statewide program, with assistance from the Department of Pesticide Regulation (DPR) for pesticide pollution and DWR for irrigation water management. The California NRCS and the University of California Cooperative Extension Service provide technical and financial services for farmers. Resource Conservation Districts also provide guidance, training, and technical assistance (SWRCB 2021b).

The proposed grazing would only occur during an approximately eight-week period in the spring as compared to existing conditions where cattle are grazed at the site year-round. Furthermore, substantially fewer animals would be grazed as compared to existing conditions. Therefore, the proposed project would result in a substantial decrease in livestock-related pollutants and erosion as compared to existing conditions. Furthermore, agricultural water quality issues from grazing, such as fecal bacterial contamination and nutrient over enrichment, are already regulated at the federal, State, and local level through NRCS, SWRCB, and local agricultural conservation district programs as described above. Therefore, the proposed project would not violate water quality standards or substantially degrade surface or groundwater quality and this impact is considered **less than significant**.

Impact HWQ-2: Impede Sustainable Groundwater Management of the Basin by Substantially Decreasing Groundwater Supplies or Interfering with Groundwater Recharge

As detailed in the discussion that follows, a project-specific groundwater sustainability assessment has been prepared, and the results demonstrate that quantity of groundwater use for the proposed project would be substantially lower as compared to historic groundwater withdrawal for crop irrigation, and would not result in land subsidence, substantial reduction in groundwater storage, or substantial declines in groundwater levels, and would not adversely affect nearby groundwater-dependent ecosystems. Therefore, this impact is considered **less than significant**.

Groundwater Recharge

Impervious surfaces, such as concrete building foundations, pavement, and heavily traveled dirt and gravel roads where the soil becomes compacted, will restrict the movement of surface water through the soil in the top layers directly underneath such facilities. Therefore, a large enough area of new impervious surfaces associated with development can interfere with groundwater recharge. Most of the approximately 380-acre proposed project site would consist of pole-mounted solar panels. Because the solar panels would be mounted on poles above the ground, they would not impede the movement of water through the soil, and therefore would have no effect on groundwater recharge. The proposed access roads would be composed of gravel or aggregate base, and therefore are considered by Sacramento County Department of Water Resources to be permeable surfaces. Project components that would result in the development of impermeable surface at the project site include the substation and battery storage buildings, which represents less than one acre of the project site. The footings associated with the poles supporting the solar panels would total less than 0.5 acre. Furthermore, as discussed previously, the entire project site is composed of soils in Hydrologic Groups C and D, which have a slow to very slow water infiltration rate, respectively (NRCS 2021). Soil borings conducted for the preliminary geotechnical report indicated the widespread presence of a shallow clay layer (confirming the NRCS hydrologic group ratings), with perched groundwater on and near the surface during the winter rainy season (Terracon Consultants, Inc. 2020). Therefore, although groundwater recharge does occur at the project site, the presence of the existing clay layer results in reduced recharge (because clay inhibits the downward movement of water). Because new impervious surfaces associated with the proposed project would be less than one acre of the 380-acre project site, the project would not substantially interfere with groundwater recharge. Furthermore, the proposed grazing activities would not represent a change that would affect groundwater storage or recharge compared to existing conditions at the project site. Therefore, the proposed project would not impede sustainable groundwater management of the basin by substantially interfering with groundwater recharge, and this impact would be **less than significant.**

Groundwater Supplies

A Water Supply Assessment (WSA) has been prepared for the proposed project as required by SB 610 (Dudek 2022b), which is included as Appendix HWQ-1. The WSA evaluated potential impacts from groundwater use for the proposed project at the approximately 380-acre project site. The results of the WSA, as related to groundwater basin sustainability, are summarized below.

Groundwater pumping from the Cosumnes Subbasin is used for public supply, domestic supply, and agricultural irrigation; however, agricultural water demand accounts for more than 90 percent of the total demand within the Cosumnes Subbasin. The project site has been used for non-irrigated rangeland since at least 1937. Additionally, row crops (i.e., alfalfa hay) and irrigated pasture to support cattle grazing have been grown in last the last 10 years. A center-pivot irrigation system is estimated to have used 68 AFY of extracted groundwater to irrigate 90 acres. There are six existing groundwater wells on the site, one

of which is associated with an existing residence that would be removed as part of the proposed project.

All of the water for the proposed project would come from on-site groundwater, likely from the largest primary agricultural irrigation well located in the center of the project site. The proposed project would require groundwater for use during construction, operations, and decommissioning, as shown in Table HWQ-1.

Table HWQ-1. Groundwater Demand for Proposed Solar Facilities

Time Period	Water Demand
Construction (8 months)	178 AFY
Operation and Maintenance Phase (35 years)	30 AFY
Decommissioning Phase (1 year)	178 AFY
Total Project Water Demand (35-year Project Lifespan)	**1,348 acre-feet**
Total Solar Facilities Water Demand Amortized Over 20 Years[1]	**37.4 AFY**
Total Solar Facilities Water Demand Amortized Over 35-Year Project Lifespan	**38.5 AFY**

Notes:

[1] Based on the 20-year timeframe specified by SB 610; does not include decommissioning water demand since the solar facilities would still be operational at the end of that time.

Source: Dudek 2022b

As shown in Table HWQ-1, the proposed solar facilities would require a total of 1,348 acre-feet (AF) of groundwater over the projected 35-year project lifespan. Averaged over the 35-year project lifespan, the proposed solar facilities would require approximately 38.5 AFY of groundwater.

In estimating the effects of groundwater withdrawal for the proposed solar facilities, Dudek (2022b) evaluated the potential reduction of groundwater storage from the solar facilities' construction, operational, and decommissioning phases, as amortized for the 20-year period required by SB 610 and the 35-year project lifespan, as compared to the existing groundwater storage underlying the project site. Potential declines in groundwater level were used to evaluate impacts to groundwater/surface water connectivity and potential groundwater-dependent ecosystems (GDEs). Only nearby GDEs within the Cosumnes River were considered. Potential GDEs were assumed to be supported by groundwater within 30 feet of the land surface, which is the average plant rooting depth. Interconnectivity of groundwater and surface water is assumed to require prolonged periods with groundwater at or near the ground surface. For land subsidence to occur, groundwater levels must be below historical lows and must exhibit a significant decline.

Groundwater storage within the aquifer underlying the project site is estimated to be 9,532 AF. The largest groundwater volume consumed by the proposed solar facilities would be

1,348 AF for the 35-year amortized project lifespan, corresponding to approximately 14.1 percent of the underlying storage.

To evaluate potential declines in groundwater levels, groundwater drawdown was calculated at the end of 1, 5, 20, and 35 years for the maximum extraction that could occur during construction or decommissioning of the proposed solar facilities. Distances from the primary pumping well, and the modeled groundwater drawdown from the project's projected groundwater use, are shown in Table HWQ-2.

Table HWQ-2. Projected Groundwater Drawdown

Distances and Features	Drawdown (feet) for 20-Year Amortized	Drawdown (feet) for 35-Year Amortized	Drawdown (feet) for 8-Month Construction
50 feet (indicative of maximum drawdown near the well)	0.124	0.132	0.686
1,000 feet (distance to the closest substantial surface water feature)	0.075	0.082	0.339
4,134 feet (distance to the closest mapped GDE)	0.052	0.058	0.174
5,531 feet (longest distance to the project site boundaries)	0.047	0.053	0.141

Note: GDE = Groundwater Dependent Ecosystem

Source: Dudek 2022a

GDEs are natural plant and animal communities that rely on water provided entirely or in part by groundwater from an aquifer. GDEs are addressed by the SGMA because they may be disrupted by the lowering of groundwater levels related to groundwater extraction. The closest GDE to the project site is along the Cosumnes River, approximately 4,134 feet west of the primary on-site groundwater pumping well. Among the characteristics used to assess GDEs is groundwater within 30 feet of the land surface, which is the average plant rooting depth. The existing groundwater level at the project site's primary pumping well is estimated to be more than 150 feet below the land surface. Therefore, the nearby GDEs are not supported by the regional groundwater level because the 150-foot groundwater level is greater than the typical GDE 30-foot plant rooting depth. In addition, the modeled maximum drawdown at the closest mapped GDE from groundwater pumping for the proposed solar facilities is approximately two inches, which is likely insignificant related to GDE health, given the ability of plant roots to adjust to natural variations in water supply (Dudek 2022b).

As previously noted, land subsidence in the Cosumnes Subbasin from 2015 through 2020 was less than one inch during this 6-year period (EKI 2021), indicating that subsidence from groundwater withdrawal does not represent a hazard in the subbasin. Because the proposed solar facilities would use less water than has historically been used for

agricultural operations, the project's groundwater use would not exacerbate land subsidence.

As discussed above, the proposed project would require approximately 38.5 AFY of groundwater (amortized over the 35-year project lifespan), as compared to approximately 68 AFY of groundwater used for previous agricultural operations. Therefore, implementing the proposed project would result in a reduction in groundwater use at the project site. The project's groundwater use would result in a total reduction in groundwater storage volume of 1,348 AF, which represents approximately 14.1 percent of the existing 9,532 AF of groundwater storage underneath the project site (Dudek 2022b).

Based on the modeling results summarized above, the WSA (Dudek 2022b) concluded that the 38.5 AFY of groundwater use for the proposed project would not substantially contribute to groundwater overdraft and would not substantially impede sustainable groundwater management of the Cosumnes Subbasin for the following reasons:

1. The estimated water demand for the proposed project is 0.03 percent of the estimated sustainable yield and 0.4 percent of the estimated Cosumnes Subbasin overdraft.[5]

2. Per-acre groundwater use within the Cosumnes Subbasin is 0.65 AFY per acre. The sustainable per-acre groundwater use within the Cosumnes Subbasin is estimated to be approximately 0.6 AFY per acre. The estimated amortized per-acre groundwater use for the proposed project is approximately 0.1 AFY per acre, which is well within the Cosumnes Subbasin per-acre sustainable use.[6]

For the reasons described above, based on the groundwater modeling and conclusions provided by Dudek (2022b), the proposed project would not substantially contribute to groundwater overdraft and would not substantially impede sustainable groundwater management of the Cosumnes Subbasin, and therefore this impact would be **less than significant**.

IMPACT HWQ-3: SUBSTANTIALLY ALTER DRAINAGE PATTERNS OR ADD IMPERVIOUS SURFACES RESULTING IN INCREASED EROSION OR SILTATION

Construction and grading activities in the proposed 380-acre project site could result in excess runoff, soil erosion, and stormwater discharges of suspended solids and increased turbidity. Such activities could also mobilize other pollutants from project construction as contaminated runoff to on-site and ultimately off-site drainage channels. Many construction-related wastes have the potential to degrade existing water quality. Construction activities that are implemented without proper controls could violate water quality standards or cause direct harm to aquatic organisms. However, as detailed in the discussion that follows, with implementation of grading, erosion control, and stormwater

[5] Sustainable yield estimated to be 125,791 per the DWR prioritization calculations and estimated overdraft value of 10,000 AFY. 39 AFY/125,791 AFY = 0.03%, 39 AFY/10,000 AFY = 0.4% (Dudek, 2022b)

[6] 38.5 AFY/400 acres = 0.10 AF/Acre (Dudek, 2022b)

pollutant laws, regulations, and permit conditions, and implementation of BMPs related to agricultural uses, this impact would be **less than significant**.

Construction activities at the project site would alter drainage patterns. Grading and cuts-and-fills to a depth of approximately 15 feet in steeper areas of the project site would be required, and would generate approximately 78,000 cubic yards of soil material that would be transported off the project site for disposal. The alteration of drainage patterns could in turn increase erosion and sedimentation that could result in degradation of waterways and conflict with beneficial uses, water quality objectives, and standards established in the Basin Plan. In addition, accidental spills of construction-related contaminants (e.g., fuels, oils, paints, solvents, cleaners, concrete) could also occur during construction, thereby degrading water quality. Construction dewatering also has the potential to impact water quality if proper dewatering procedures are not followed and water is improperly stored and disposed of (and treated prior to discharge, if necessary).

As described in detail in Impact HWQ-1, several existing regulations would apply to the project and would be implemented to reduce or avoid impacts related to erosion, sedimentation, and water quality degradation during construction as described above under the Regulatory Setting section. For example, the project applicant must comply with the County's Land Grading and Erosion Control Ordinance, which requires implementation of erosion and sediment control BMPs to protect receiving water quality, which includes both surface water and groundwater. Furthermore, projects that disturb more than one acre of land must comply with the requirements in the SWRCB's Construction General Permit, which requires preparation of a SWPPP and implementation of BMPs to prevent soil erosion and discharge of other construction-related pollutants such as petroleum products, solvents, paints, and cement, that could contaminate nearby water resources.

Project operation would result in less than one acre of new impervious surfaces (Baker-Williams Engineering Group 2022a, 2022b). Projects must implement BMPs during project operation to reduce post-construction impacts to water quality. Long-term water quality impacts must be reduced using site design and source control measures to help keep pollutants out of stormwater. In addition, industrial facilities require appropriate NPDES permits/WDRs, and implementation of BMPs consistent with the CASQA *Industrial/Commercial BMP Handbook* (CASQA 2019) or its equivalent, including annual reporting of any structural control measures and treatment systems. Preliminary drainage studies have been prepared and accepted by the Sacramento County Department of Water Resources (Baker-Williams Engineering Group 2022a, 2022b). For purposes of the drainage studies, the internal gravel or aggregate base access roads are considered to be permeable surfaces, and since the solar panels would be pole mounted and the ground would be re-seeded with vegetation after construction, the drainage studies assume the existing pre-project grassland land use type would be maintained during project operation. Most of the operational stormwater drainage would continue to sheet flow overland to existing watercourses. The preliminary drainage studies determined that pre-project and post-project surface water runoff would not change. The project is required to adhere to Sacramento County storm drainage requirements including water quality features as specified in the *Sacramento Region Stormwater Quality Design*

Manual (Sacramento County et al. 2018). The Stormwater Quality Design Manual requires commercial projects with less than one acre of impervious surfaces to include source control and trash capture for water quality measures. Therefore, a full trash capture device capable of filtering 5 millimeter (mm) particles would be installed in the proposed drain inlet south of the proposed access road. In addition, the project would include water efficient landscaping and irrigation practices consistent with the Stormwater Quality Design Manual. Per Sacramento County requirements, a detailed final drainage study would be performed and provided to the County for approval when improvement plans are submitted, and prior to issuance of any construction permits.

Compliance with the regulatory controls discussed above, which include implementation of a SWPPP with site-specific BMPs, stormwater controls in the CASQA *Industrial/Commercial BMP Handbook*, Sacramento County Municipal Code requirements related to preliminary and final drainage plans, the project's *Agricultural Management Plan*, and compliance with federal and state programs related to agricultural water quality (combined with the fact that substantially fewer animals would be grazed for a much shorter time period) would appropriately control erosion and sedimentation from alteration of drainages and the addition of new impervious surfaces at the project site. Therefore, this impact would be **less than significant.**

IMPACT HWQ-4: SUBSTANTIALLY ALTER DRAINAGE PATTERNS OR ADD IMPERVIOUS SURFACES THAT WOULD EXCEED STORM DRAINAGE SYSTEMS, SUBSTANTIALLY DEGRADE WATER QUALITY, RESULT IN INCREASED FLOODING, OR IMPEDE OR REDIRECT FLOOD FLOWS

Buildout of the proposed project could increase the amount of impervious surfaces on-site, thereby increasing surface runoff. This increase in surface runoff could result in an increase in both the total volume and the peak discharge rate of stormwater runoff, and therefore could result in greater potential for erosion, sedimentation, and on- and off-site flooding. In addition, the proposed project includes placement of solar panels and fencing within a FEMA 100-year floodplain, which could impede flood flows, raise the base flood water surface elevation, and result in upstream or downstream flooding. As detailed in the discussion that follows, this impact is **less than significant.**

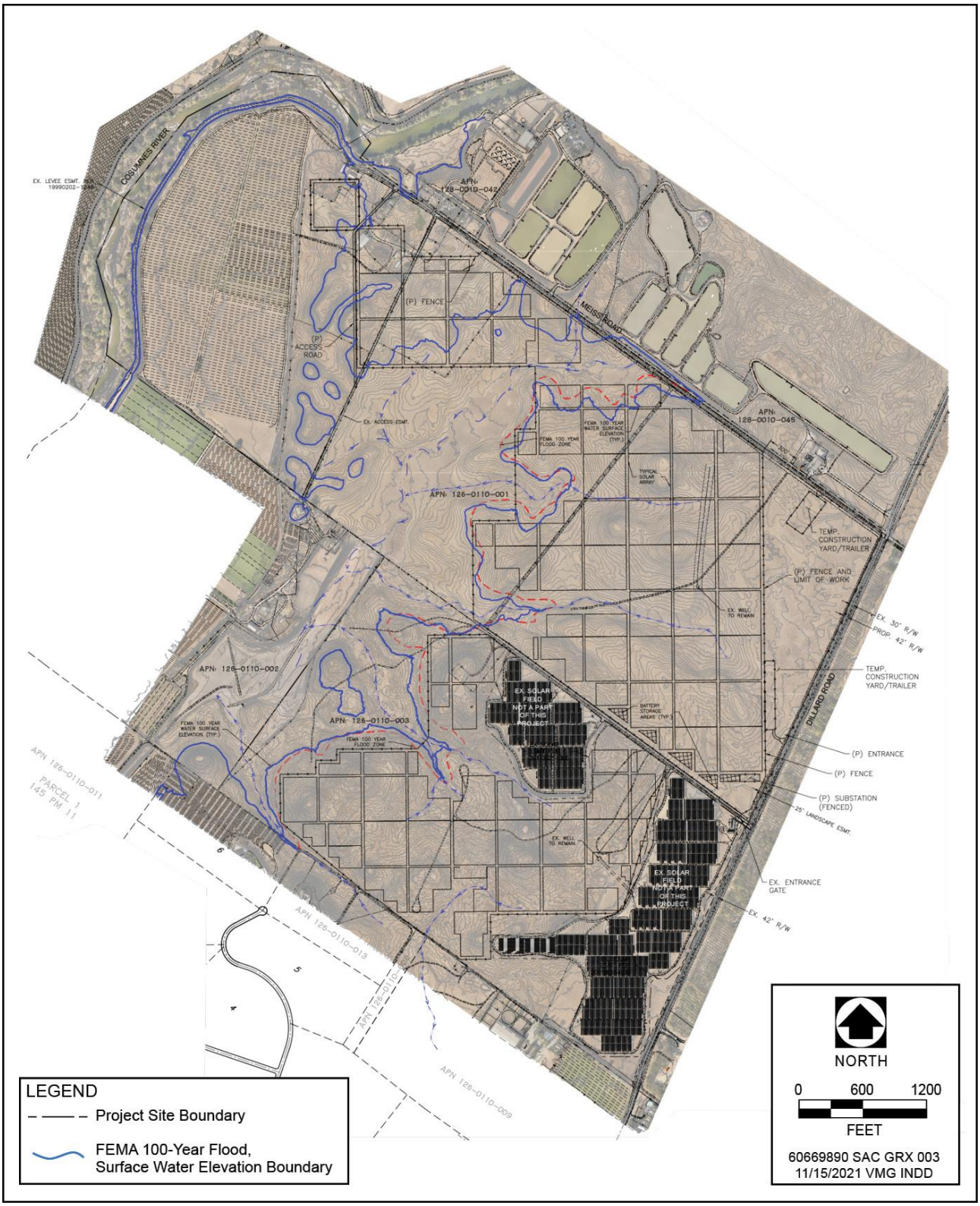
Construction and operation of solar facilities on the approximately 380-acre project site would alter existing drainage patterns, as shown in the preliminary grading plan (Baker-Williams Engineering Group 2021). Grading and cuts-and-fills to a depth of approximately 15 feet in steeper areas of the project site would be required, and would generate approximately 78,000 cubic yards of soil material that would be transported off the project site for disposal. The solar panels would be pole-mounted, and therefore would not add substantial new impervious surfaces. Because the internal roadways would be composed of gravel or aggregate base, for purposes of the preliminary drainage studies, the internal roadways were considered to be permeable surfaces (Baker-Williams Engineering Group 2022a, 2022b). Therefore, less than one acre of new impermeable surfaces would be created at the project site, consisting of the substation and battery storage buildings. Increased peak flow rates have the potential to exceed drainage system capacities,

exacerbate erosion in overland flow and drainage swales and creeks, and result in downstream sedimentation. Sedimentation, in turn, could increase the rate of deposition in natural receiving waters and reduce conveyance capacities, resulting in an increased risk of flooding. Erosion of upstream areas and related downstream sedimentation typically leads to adverse changes to water quality and hydrology. Most of the existing stormwater drainage at the project site is naturally occurring, and since there is no existing stormwater drainage system, runoff drains overland towards the south and west, into the on-site surface water features described in the *Aquatic Resources Delineation Report* (Dudek 2022a), which drain into the 16-acre, off-site pond to the west. The 16-acre pond discharges through a 42-inch culvert into the Cosumnes River, nearly one mile south of the project site. With project implementation, most of the gently rolling topography of the project site would generally be maintained, and where necessary, grading would occur to ensure that all portions of the project site continue to drain towards the south and west into the existing surface water features, which would continue to convey the project's stormwater runoff into the approximately 16-acre, off-site pond (Baker-Williams Engineering Group 2021). As discussed in the preliminary drainage studies (Baker-Williams Engineering Group 2022a, 2022b), since the solar panels would be pole mounted and the ground would be re-seeded with vegetation after construction, the drainage studies assume the existing pre-project grassland land use type would be maintained during project operation. Most of the operational stormwater drainage would continue to sheet flow overland to existing watercourses. Modeling conducted for the preliminary drainage studies determined that pre-project and post-project surface water runoff would not change. A drainage inlet would be installed south of the proposed access road. The project is required to adhere to Sacramento County storm drainage requirements including water quality features as specified in the *Sacramento Region Stormwater Quality Design Manual* (Sacramento County et al. 2018). The Stormwater Quality Design Manual requires commercial projects with less than one acre of impervious surfaces to include source control and trash capture for water quality measures. Therefore, a full trash capture device capable of filtering 5 mm particles would be installed in the proposed drain inlet south of the proposed access road. In addition, the project would include water efficient landscaping and irrigation practices consistent with the Stormwater Quality Design Manual.

The northwest corner of the project site is adjacent to, but just outside (to the east) of the CVFPB's Designated Floodway for the Cosumnes River 200-year floodplain, as regulated under SB 5 (see Plate HWQ-1). Therefore, an encroachment permit from the CVFPB would not be required for project development.

The County's Regulatory Floodplain includes both FEMA 100-year flood hazard zones and CVFPB 200-year flood hazard zones (shown on Plate HWQ-1). The addition of impervious surfaces and drainage infrastructure from urbanization can result in increased runoff volumes and dry weather flows, increased frequency and number of runoff events, increased long-term cumulative duration of flows, as well as increased peak flows. Plate HWQ-2 shows the proposed land uses at the project site in relationship to the FEMA floodplain classifications, and the approximate boundary of the FEMA 100-year base flood water surface elevation. The proposed substation, battery storage buildings, and

Plate HWQ-2: Site Plan and FEMA 100-Year Flood Water Surface Elevation Boundary



Sources: Baker Williams Engineering Group 2020, adapted by AECOM in 2021

most of the solar panels, access roads, and fencing would be outside of the FEMA 100-year floodplain. The western half of Meiss Road (an existing roadway) is within the FEMA 100-year floodplain. Furthermore, as shown in Plate HWQ-2, approximately 58 acres of the proposed project site immediately southwest of Meiss Road is within the FEMA 100-year floodplain; this area is proposed for PV arrays and fencing. Three smaller areas of the project site to the south within the FEMA 100-year floodplain, approximately 5 acres each, would also have PV arrays and fencing (Plate HWQ-2).

In all areas of special flood hazards, including the project site, compliance with the standards set forth in the County's Floodplain Management Ordinance (Municipal Code Title 16, Chapter 16.02, Section 16.02.060) (Ordinance SZC-2016-0023) are required. The County's standards control filling, grading, and other development which may increase flood damage; and prevent or regulate the construction of flood barriers that would unnaturally divert flood waters or which may increase flood hazards in other areas. Per County Ordinance SZC-2016-0023, Section 905-01, the project applicant must apply for a development permit for construction in FEMA flood zones, with approval by the County's floodplain administrator. The permit application must include plans showing elevations of proposed structures and the elevations of areas proposed for materials and equipment storage; the proposed elevation in relation to mean sea level, of the lowest floor of all structures; the proposed elevation in relation to mean sea level to which any structure will be floodproofed; the location, volume, and depth of proposed fill and excavation within the 100-year floodplain and floodway; and a description of the extent to which any watercourse will be altered or relocated as a result of project development.

Modeling conducted for the preliminary drainage studies (Baker-Williams Engineering Group 2022a, 2022b) accounted for 10-year and 100-year storm events as required by the Sacramento County Department of Water Resources. As part of the preliminary drainage studies, Baker-Williams Engineering Group determined that there are portions of the FEMA 100-year flood zone at the project site that are topographically above the floodplain, and therefore should not be included within the 100-year flood zone. A CLOMR would be processed with FEMA to change the flood zone boundary at the project site. As further discussed in the preliminary drainage studies, the proposed project would result in fill within the 100-year floodplain, and to mitigate for the resulting loss of flood storage, the project would add approximately 1.1 acre-feet of storage for the 100-year floodplain to compensate for this loss. Therefore, the proposed grading would result in no-net-loss of floodplain storage within the 100-year floodplain. Modeling conducted for the preliminary drainage studies also demonstrates that post-project stormwater flows would have no negative effect on the existing drainage culvert at the outlet of the off-site, 16-acre pond.

In conclusion, preliminary drainage studies related to construction and operational stormwater drainage effects on hydrology and hydraulics (flooding), and which include water quality features as required by the County, have been performed. Furthermore, per Sacramento County requirements, a detailed final drainage study would be performed and provided to the County for approval when improvement plans are submitted, and prior to issuance of any construction permits. Therefore, impacts related to alteration of drainage patterns or the addition of impervious surfaces that would exceed storm

drainage systems, substantially degrade water quality, result in increased flooding, or impede or redirect flood flows would be **less than significant.**

IMPACT HWQ-5: CONFLICT WITH A WATER QUALITY CONTROL PLAN OR SUSTAINABLE GROUNDWATER MANAGEMENT PLAN

As described in Impact HWQ-1, above, compliance with the applicable laws, regulations, ordinances, and permit terms would require the project to reduce pollutants in construction and operational stormwater runoff generated in the proposed project site through implementation of operation-related LID technologies, BMPs, and pollutant source control measures; preparation of a SWPPP with associated BMPs designed to control construction-related erosion and pollutants; and compliance with federal and state programs that regulate water quality as related to agricultural land uses. These measures would protect water quality as required by the Basin Plan (Central Valley RWQCB 2019). Therefore, development of the project (including proposed spring grazing) would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, and this impact would be **less than significant**.

For the reasons described in Impact HWQ-2, above, the proposed project would not conflict with or obstruct implementation of the *Groundwater Sustainability Plan for the Cosumnes Subbasin* (EKI 2021). Therefore, this impact would be **less than significant**.

10 NOISE

INTRODUCTION

This chapter includes a description of ambient noise conditions, a summary of applicable regulations related to noise and vibration, and an analysis of the potential impacts resulting from the implementation of the proposed project. Mitigation measures are recommended, as necessary, to reduce potentially significant impacts.

ENVIRONMENTAL SETTING

ACOUSTIC FUNDAMENTALS

Noise is generally defined as sound that is loud, disagreeable, unexpected, or unwanted. Sound, as described in more detail below, is mechanical energy transmitted in the form of a wave because of a disturbance or vibration, and as any pressure variation in the air that the human ear can detect.

SOUND PROPERTIES

A sound wave is introduced into a medium (air) by a vibrating object. The vibrating object (e.g., vocal cords, the string and soundboard of a guitar, the diaphragm of a radio speaker) is the source of the disturbance that moves through the medium. Regardless of the type of source that creates the sound wave, the particles of the medium through which the sound moves are vibrating in a back-and-forth motion at a given frequency (pitch).[1] A commonly used unit for frequency is cycles per second, called hertz (Hz).[2]

A wave transports energy along a medium. The amount of energy carried by a wave is related to the amplitude (loudness) of the wave. A high-energy wave is characterized by high amplitude; a low-energy wave is characterized by low amplitude. The amplitude of a wave refers to the maximum amount of displacement of a particle from its rest position. The energy transported by a wave is directly proportional to the square of the amplitude of the wave. This means that a doubling of the amplitude of a wave is indicative of a quadrupling of the energy transported by the wave.

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[1] The frequency of a wave refers to how often the particles vibrate when a wave passes through the medium. The frequency of a wave is measured as the number of complete back-and-forth vibrations of a particle per unit of time. If a particle of air undergoes 1,000 longitudinal vibrations in 2 seconds, then the frequency of the wave would be 500 vibrations per second.

[2] Hertz (abbreviated: Hz) is the standard unit of measurement used for measuring frequency. Since frequency is measured in cycles per second, one hertz equals one cycle per second. Hertz is commonly used to measure wave frequencies, such as sound waves, light waves, and radio waves. For example, the average human ear can detect sound waves between 20 and 20,000 Hz. Sound waves close to 20 Hz have a low pitch and are called "bass" frequencies. Sound waves above 5,000 Hz have a high pitch and are called "treble" frequencies.

SOUND AND THE HUMAN EAR

Because of the ability of the human ear to detect a wide range of sound-pressure fluctuations, sound-pressure levels are expressed in logarithmic units called decibels (dB) to avoid a very large and awkward range in numbers. The sound pressure level in decibels is calculated by taking the log of the ratio between the actual sound pressure and the reference sound pressure squared. The reference sound pressure is considered the absolute hearing threshold (Caltrans 2013). Use of this logarithmic scale reveals that the total sound from two individual sources, each measured at 65 A-weighted decibels (dBA), is 68 dBA, not 130 dBA; that is, doubling the source strength increases the sound pressure by 3 dBA. Typical noise levels associated with various sources are shown on Plate NOI-1.

Because the human ear is not equally sensitive to all sound frequencies, a specific frequency-dependent rating scale was devised to relate noise to human sensitivity. A dBA scale performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. The basis for compensation is the faintest sound audible to the average ear at the frequency of maximum sensitivity. This dBA scale has been chosen by most authorities to regulate environmental noise. With respect to how humans perceive and react to changes in noise levels, a 1-dBA increase is imperceptible, a 3-dBA increase is barely perceptible, a 6-dBA increase is clearly noticeable, and a 10-dBA increase is subjectively perceived as approximately twice as loud (Egan 1988), as presented in Table NOI-1.[3]

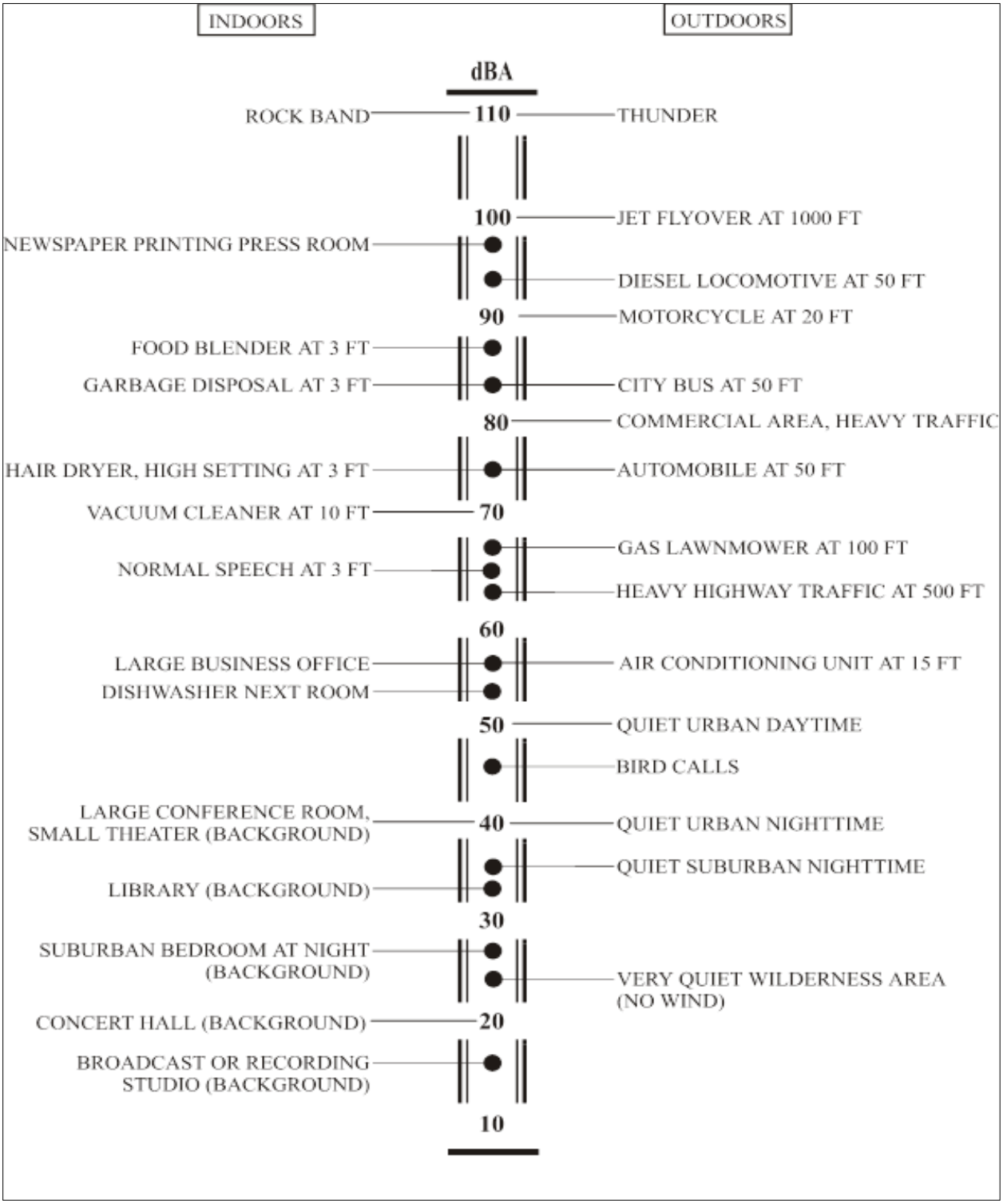
Table NOI-1. Subjective Reaction to Changes in Noise Levels of Similar Sources

Change in Level, dBA	Subjective Reaction	Factor Change in Acoustical Energy
1	Imperceptible (except for tones)	1.3
3	Just barely perceptible	2.0
6	Clearly noticeable	4.0
10	About twice (or half) as loud	10.0

Note: dBA = A-weighted decibels
Source: Egan 1988

[3] Table NOI-1 was developed on the basis of the reactions of test subjects to changes in the levels of steady-state pure tones or broadband noise and changes in levels of a given noise source. It is probably most applicable to noise levels in the range of 50–70 dBA, as this is the usual range of voice and interior noise levels.

Plate NOI-1: Typical Noise Levels



Notes:
dBA = A-weighted decibels
Source: Caltrans 2013

SOUND PROPAGATION AND ATTENUATION

As sound (noise) propagates from the source to the receptor, the attenuation, or manner of noise reduction in relation to distance, is dependent on surface characteristics, atmospheric conditions, and the presence of physical barriers. The inverse-square law describes the attenuation caused by the pattern in which sound travels from the source to the receptor. Sound travels uniformly outward from a point source in a spherical pattern with an attenuation rate of 6 dBA per doubling of distance (dBA/DD). However, from a line source (e.g., a road), sound travels uniformly outward in a cylindrical pattern with an attenuation rate of 3 dBA/DD. The characteristics of the surface between the source and the receptor may result in additional sound absorption and/or reflection. Atmospheric conditions such as wind speed, temperature, and humidity may affect noise levels. The presence of a barrier between the source and the receptor may also attenuate noise levels. The actual amount of attenuation depends on the size of the barrier and the frequency of the noise. A noise barrier may be any natural or human-made feature such as a hill, tree, building, wall, or berm (Caltrans 2013).

NOISE DESCRIPTORS

The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of the noise. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise are defined below (Caltrans 2013).

- **L_{max} (Maximum Noise Level):** The maximum instantaneous noise level during a specific period of time. The L_{max} may also be referred to as the "peak (noise) level."
- **L_{min} (Minimum Noise Level):** The minimum instantaneous noise level during a specific period of time.
- **L_{eq} (Equivalent Noise Level):** The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value is calculated, which is then converted back to dBA to determine the L_{eq}. In noise environments that are determined by major noise events, such as aircraft overflights, the L_{eq} value is heavily influenced by the magnitude and number of single events that produce the high noise levels.
- **L_{dn} (Day-Night Noise Level):** The 24-hour L_{eq} with a 10-dBA "penalty" for noise events that occur during the noise-sensitive hours between 10:00 p.m. and 7:00 a.m. In other words, 10 dBA is "added" to noise events that occur in the nighttime hours, and this generates a higher reported noise level when determining compliance with noise standards. The L_{dn} attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.
- **L_n (statistical descriptor):** The noise level exceeded "n" percent of a specific period of time. The $L_{10}(t)$ is a statistical descriptor of the sound level exceeded for 10 percent of the time of the measurement period (t). It can be obtained using short-term measurements; however, it cannot be accurately added to or subtracted

from other L10 measures or other descriptors. Typically, the L_{10} is about 3 dB(A) above the L_{eq} (t). The L_{50}(t) is a statistical descriptor of the sound level exceeding 50 percent of the time of the measurement period (t). The L_{90}(t) is a statistical descriptor of the sound level exceeding 90 percent of the time of the measurement period (t). This is considered to represent the background noise without the source in question. Where the noise emissions from a source of interest are constant (such as noise from a fan, air conditioner, or pool pump) and the ambient noise level has a degree of variability (for example, due to traffic noise), the L_{90} descriptor may adequately describe the noise source.

- **CNEL (Community Noise Equivalent Level):** Similar to the L_{dn} described above, but with an additional 5-dBA, "penalty" added to noise events that occur during the noise-sensitive hours between 7:00 p.m. and 10:00 p.m., which are typically reserved for relaxation, conversation, reading, and television. When the same 24-hour noise data are used, the reported CNEL is typically approximately 0.5 dBA higher than the L_{dn}.
- **SENL (Single-Event [Impulsive] Noise Level):** A receiver's cumulative noise exposure from a single impulsive noise event, which is defined as an acoustical event of short duration and involves a change in sound pressure above some reference value. SENLs typically represent the noise events used to calculate the L_{eq}, L_{dn}, and CNEL.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level L_{eq}, which corresponds to a steady-state, A-weighted sound level containing the same total energy as a time-varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptors such as L_{dn} and CNEL, as defined above, and correlates well with community response to noise.

NEGATIVE EFFECTS OF NOISE ON HUMANS

Negative effects of noise exposure include physical damage to the human auditory system, interference, and disease. Exposure to noise may result in physical damage to the auditory system, which may lead to gradual or traumatic hearing loss. Gradual hearing loss is caused by sustained exposure to moderately high noise levels over a period of time; traumatic hearing loss is caused by sudden exposure to extremely high noise levels over a short period. Gradual and traumatic hearing loss both may result in permanent hearing damage. In addition, noise may interfere with or interrupt sleep, relaxation, recreation, and communication. Although most interference may be classified as annoying, the inability to hear a warning signal may be considered dangerous. Noise may also be a contributor to diseases associated with stress, such as hypertension, anxiety, and heart disease. The degree to which noise contributes to such diseases depends on the frequency, bandwidth, the level of the noise, and the exposure time (Caltrans 2013).

FUNDAMENTAL NOISE CONTROL OPTIONS

Any noise problem is generally composed of three basic elements: the noise source, a transmission path, and a receiver. The appropriate acoustical treatment for a given project

should consider the nature of the noise source and the sensitivity of the receiver. The problem should be defined in terms of appropriate criteria (L_{dn}, L_{eq}, or L_{max}); the location of the sensitive receiver (inside or outside); and the time that the problem occurs (daytime or nighttime). Noise control techniques should then be selected to provide an acceptable noise environment for the receiving property while remaining consistent with local accessibility, safety, and aesthetic standards, as well as practical structural and economic limits. Example noise control options are listed below.

- **Setbacks** - Noise exposure may be reduced by increasing the distance between the noise source and the receiving use. Setback areas can, for example, take the form of open space, frontage roads, recreational areas, and storage yards.
- **Barriers** - Shielding by barriers can be obtained by placing walls, berms, or other structures (such as buildings) between the noise source and the receiver. The effectiveness of a barrier depends on blocking the line of sight between the source and receiver; effectiveness is improved when the sound must travel a longer distance to pass over the barrier than if it were traveling in a straight line from source to receiver.
- **Site Design** - Buildings can be placed on a project site to shield other structures or areas from areas affected by noise, and to prevent an increase in noise level caused by reflections. The use of one building to shield another can significantly reduce a project's overall noise control costs, particularly if the shielding structure is insensitive to noise.
- **Building Façades** - When interior noise levels are of concern in a noisy environment, noise reduction may be obtained through acoustical design of building façades. Standard construction practices provide a noise reduction of 10–15 dBA for building façades with open windows and a noise reduction of approximately 25 dBA when windows are closed (EPA 1974). Thus, an exterior-to-interior noise reduction of 25 dBA can be obtained by requiring that building design include adequate ventilation systems, which allows windows on a noise-affected façade to remain closed under any weather condition.
- **Vegetation** - Trees and other vegetation are often thought to provide significant noise attenuation. However, approximately 100 feet of dense foliage (so that no visual path extends through the foliage) is required to achieve a 5-dBA attenuation of traffic noise (Caltrans 2013). Thus, the use of vegetation as a noise barrier should not be considered a practical method of noise control unless large tracts of dense foliage are part of the existing landscape. Vegetation can be used to acoustically "soften" intervening ground between a noise source and a receiver, increasing ground absorption of sound and thus increasing the attenuation of sound with distance.

VIBRATION

Vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of groundborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves,

landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as operating factory machinery, or transient, such as explosions. As is the case with airborne sound, groundborne vibrations may be described by amplitude and frequency.

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean square (RMS), as in RMS vibration velocity. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (FTA 2018). PPV and RMS are normally described in inches per second (in/sec).

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table NOI-2, which was developed by the California Department of Transportation (Caltrans), shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of PPV in in/sec.

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a period of one second. Like airborne sound, the RMS velocity is often expressed in decibel notation, as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2018). This is based on a reference value of one microinch per second (µin/sec).

The background vibration-velocity level in residential areas is usually approximately 50 VdB. Groundborne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2018).

Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Construction activities can generate groundborne vibrations, which can pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants (FTA 2018).

Table NOI-2. Effects of Various Vibration Levels on People and Buildings

Velocity Level, PPV (in/sec)	Vibration Level, VdB	Human Reaction	Effect on Buildings
0.01	68	Barely perceptible	No effect
0.04	80	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structures
0.08	86	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	88	Strongly perceptible	Virtually no risk of damage to normal buildings
0.3	98	Strongly perceptible to Severe	Threshold at which there is a risk of damage to older residential structures
0.5	102	Severe – Vibration considered unpleasant	Threshold at which there is a risk of damage to newer residential structures

Notes:
PPV=peak particle velocity; In/sec=inches per second; VdB = Vibration Decibel
Source: Caltrans 2020

Construction vibrations can be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact pile driving, and wrecking balls. Continuous vibrations result from vibratory pile drivers, large pumps, horizontal directional drilling, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment. “Architectural” damage can be classified as cosmetic only, such as minor cracking of building elements, while “structural” damage may threaten the integrity of a building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to a building. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is in a high state of disrepair and the construction activity occurs immediately adjacent to the structure. Table NOI-3 shows the criteria established by the Federal Transit Administration (FTA) for the likelihood of structural damage due to vibration.

Table NOI-3. Groundborne Vibration Criteria: Architectural Damage

Building Category	PPV (in/sec)	Lv (VdB)[1]
I. Reinforced concrete, steel, or timber (no plaster)	0.5	102
II. Engineered concrete masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely and susceptible to vibration damage	0.12	90

Notes:
in/sec = inches per second; PPV = peak particle velocity; Lv = Vibration Level; VdB = Vibration Decibel.
[1] RMS velocity calculated from vibration level (VdB) using the reference of one micro-inch/second.
Source: FTA 2018.

EXISTING CONDITIONS

EXISTING NOISE-SENSITIVE LAND USES

Noise-sensitive land uses generally consist of those uses where noise exposure would result in adverse effects on uses for which quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise. Other examples of noise-sensitive land uses include nursing homes, schools, hospitals, libraries, childcare facilities, and places of worship.

The proposed project site is located in Sacramento County, approximately 1.7 miles south of State Route 16 (SR 16), and approximately 800 feet west of Dillard Road. Noise-sensitive land uses in the project area include single-family residences south of the project site, to the north of the project site along Meiss Road, and east of the project site along Dillard Road. The nearest noise-sensitive land uses to the proposed project facilities is a residence on Meiss Road that is within 50 feet of the project site and approximately 120 feet from the nearest construction activity, approximately 1,000 feet west of Dillard Road. Plate NOI-2 shows the nearby sensitive land uses and the noise monitoring locations discussed below.

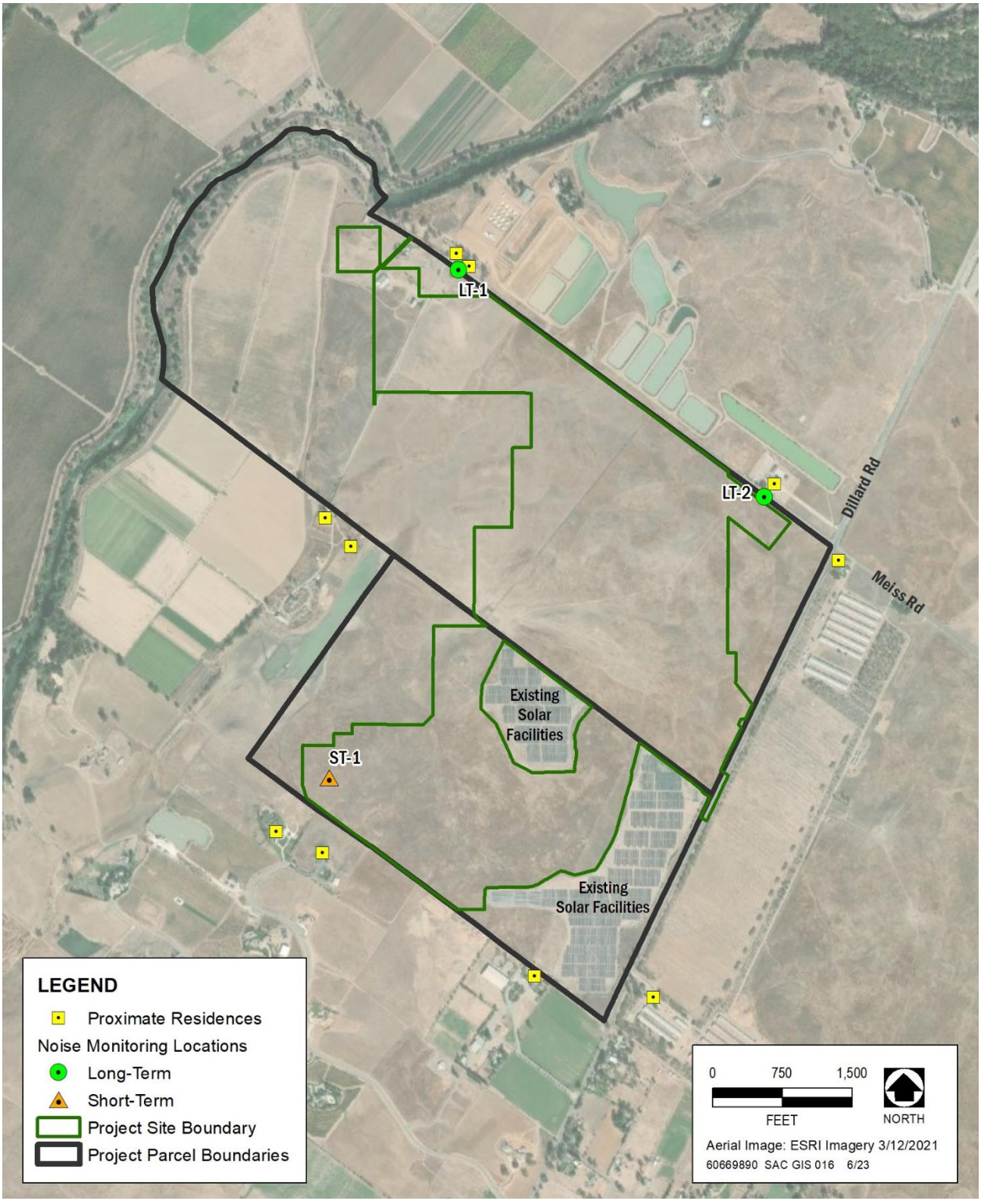
COMMUNITY NOISE SURVEY

A community noise survey was conducted on May 3rd through May 4th, 2022, to document the existing noise environment at various locations within the proposed project area. The dominant noise source identified during the ambient noise survey was traffic from Dillard Road and distant SR 16.[4]

Community noise survey locations are shown in Plate NOI-2. The L_{eq}, and L_{max} values were taken at two long-term (LT) and one short-term (ST) ambient noise location, with the results presented in Table NOI-4. During the survey, average daytime ambient noise levels ranged from 39 dB to 55 dB L_{eq}, with maximum noise levels that ranged from 55 dB to 81 dB L_{max}.

[4] Measurements of noise levels were taken in accordance with ANSI standards. Continuous 24-hour, long-term (LT) monitoring of noise levels was conducted at two locations, and 1-hour monitoring at one short-term (ST) location, using Larson Davis Laboratories (LDL) Model 820 sound-level meters. The sound-level meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure that the measurements would be accurate. The equipment used meets all pertinent specifications of the American National Standards Institute (ANSI) for Type 1 sound-level meters (ANSI S1.4-1983[R2006]).

Plate NOI-2: Sensitive Land Use and Noise Monitoring Locations



Source: AECOM 2022

Table NOI-4. Summary of Measured Ambient Noise Levels, dBA

Site	Location	Date	Duration	L_{dn}	Daytime (7 a.m.–10 p.m.) L_{eq} \ L_{max}	Nighttime (10 p.m.–7 a.m.) L_{eq} \ L_{max}
LT-1	Within Project Site (Northern Boundary)	5/3/22 – 5/4/22	24 Hour	54.8	49.7 \ 72.8	48.1 \ 56.1
LT-2	Within Project Site (Southern Boundary)	5/3/22 – 5/4/22	24 Hour	59.1	54.8 \ 80.7	52.2 \ 66.6
ST-1	East of Project Site (Krave Jerky Outside Seating Area)	5/4/22	1 Hour	--	39.0 \ 55.4	--

Notes: dB = A-weighted decibels; L_{dn} = day-night average noise level; L_{eq} = the equivalent hourly average noise level; L_{max} = maximum noise level.
Monitoring locations correspond to those depicted in Plate NOI-2.
Source: Data collected by AECOM 2022

Existing Noise Sources

The principal noise source near the project area is vehicular traffic on nearby roadways and from distant SR 16. Noise from operation and maintenance of the existing solar facility southeast of the proposed project site and noise from overhead aircraft also contribute, to a lesser extent, to the existing noise environment.

Existing vehicle traffic noise levels in the project area were modeled using the Federal Highway Administration (FHWA)[5] Highway Traffic Noise Prediction Model (FHWA-RD-77-108) and traffic data was used from the County Traffic Count data[6] and Caltrans Traffic Counts.[7]

Table NOI-5 summarizes the modeled traffic noise levels, provides noise levels from the centerline of roadways currently affecting the project area, and lists distances from the modeled roadway centerlines and the distances to the 60 dB, 65 dB, and 70 dB L_{dn} traffic noise contours. The extent to which noise-sensitive uses in the area are affected by existing traffic noise depends on their respective proximity to the roadways and their sensitivity to noise.

[5] The FHWA model is based on California Vehicle Noise (CALVENO) reference noise factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receptor, and ground attenuation factors.
[6] https://data.saccounty.gov/datasets/traffic-count-data/explore?showTable=true
[7] https://dot.ca.gov/programs/traffic-operations/census

Table NOI-5. Summary of Modeled Levels of Existing Traffic Noise

Roadway	Segment		Distance	Noise Level, dB	Distance (feet) from Roadway Centerline to L_{dn} Contour		
	From	To			70 dB	65 dB	60 dB
State Route 16	West of Dillard Road	East of Dillard Road	50	69.1	44	94	203
Dillard Road	Meiss Road	South of Meiss Road	50	61.6	14	30	64
Meiss Road	Dillard Road	West of Dillard Road	50	49.1	2	4	9

Notes: dB = A-weighted decibels; L_{dn} = day-night average noise level.
Source: Data modeled by AECOM in 2022

REGULATORY SETTING

FEDERAL

Although not directly applicable to the proposed project, the research that supported the development of federal community noise standards is broadly applicable in understanding human response to different noise levels and is summarized below for the reader's edification.

U.S. ENVIRONMENTAL PROTECTION AGENCY NOISE CONTROL ACT

The Federal Noise Control Act of 1972 (Public Law 92-574) established a requirement that all federal agencies administer their programs to promote an environment free of noise that would jeopardize public health or welfare.[8] Although the U.S. Environmental Protection Agency (EPA) was given a major role in disseminating information to the public and coordinating federal agencies, each federal agency retains authority to adopt noise regulations pertaining to agency programs.[9]

In 1974, in response to the requirements of the federal Noise Control Act, the EPA identified indoor and outdoor noise level limits to protect public health and welfare (communication disruption, sleep disturbance, and hearing damage). Outdoor and indoor noise exposure limits of 55 dB L_{dn} and 45 dB L_{dn}, respectively, are identified as desirable to protect against speech interference and sleep disturbance for residential, educational, and healthcare areas. The sound-level criterion identified to protect against hearing

[8] The U.S. Environmental Protection Agency (EPA) was given the responsibility for providing information to the public regarding identifiable effects of noise on public health and welfare, publishing information on the levels of environmental noise that will protect the public health and welfare with an adequate margin of safety, coordinating federal research and activities related to noise control, and establishing federal noise emission standards for selected products distributed in interstate commerce. The Noise Control Act also directed that all federal agencies comply with applicable federal, State, interstate, and local noise control regulations.

[9] The EPA can, however, require other federal agencies to justify their noise regulations in terms of the Noise Control Act policy requirements.

damage in commercial and industrial areas is 70 dB 24-hour L_{eq} (both outdoors and indoors).

The EPA's Office of Noise Abatement and Control was established to coordinate federal noise control activities. In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at lower levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to state and local governments.

U.S. Department of Transportation and U.S. EPA Vibration Guidelines

To address the human response to groundborne vibration, the FTA of the U.S. Department of Transportation has set forth guidelines for maximum-acceptable vibration criteria for different types of land uses. These include 65 VdB for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities); 80 VdB for residential uses and buildings where people normally sleep; and 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices) (FTA 2018).

Standards have also been established to address the potential for groundborne vibration to cause structural damage to buildings. These standards were developed by the Committee of Hearing, Bio Acoustics, and Bio Mechanics (CHABA) at the request of the EPA (FTA 2018). For fragile structures, CHABA recommends a maximum limit of 0.25 in/sec PPV (FTA 2018).

State

In 1971, the State required cities and counties to include noise elements in their general plans (Government Code Section 65302 et seq.). The State of California General Plan Guidelines (Office of Planning and Research 2017) identify guidelines for the noise elements of local general plans, including a sound level/land-use compatibility chart. The noise element guidelines identify the "normally acceptable" range of noise exposure for low-density residential uses as less than 60 dB L_{dn}, and the "conditionally acceptable" range as 55-70 dB L_{dn}. Overlapping noise level ranges are intended to indicate that local conditions (existing sound levels and community attitudes toward dominant sound sources) should be considered in evaluating land use compatibility at specific locations. The State's guidance for land use/noise compatibility is summarized in Table NOI-6.

Table NOI-6. Land Use Noise Compatibility Guidelines

Land Use Category	Community Noise Exposure (CNEL/L_{dn}, dBA)			
	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]	Clearly Unacceptable[4]
Residential-Low Density Single Family, Duplex, Mobile Home	<60	55–70	70–75	75+
Residential-Multiple Family	<65	60–70	70–75	75+
Transient Lodging, Motel, Hotel	<65	60–70	70–80	80+
School, Library, Church, Hospital, Nursing Home	<70	60–70	70–80	80+
Auditorium, Concert Hall, Amphitheater		<70	65+	
Sports Arenas, Outdoor Spectator Sports		<75	70+	
Playground, Neighborhood Park	<70		67.5–75	72.5+
Golf Courses, Stable, Water Recreation, Cemetery	<75		70–80	80+
Office Building, Business Commercial and Professional	<70	67.5–77.5	75+	
Industrial, Manufacturing, Utilities, Agriculture	<75	70–80	75+	

Notes: CNEL = Community Noise Equivalent Level; dBA = A-weighted decibels; L_{dn} = day-night average noise level.

1 Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

2 New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

3 New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.

4 New construction or development should generally not be undertaken.

Source: OPR 2017

California Department of Transportation

For the protection of fragile, historic, and residential structures, Caltrans recommends for highway construction analysis a threshold of 0.2 in/sec PPV for normal residential buildings and 0.08 in/sec PPV for old or historically significant structures (Caltrans 2013). These standards are more stringent than the recommended guidelines established by the FTA, presented above. Table NOI-7 shows the general thresholds for structural responses to vibration levels.

Table NOI-7. Structural Responses to Vibration Levels, Peak Vibration Threshold (in/sec PPV)

Structure and Condition	Peak Vibration Threshold (in/sec PPV) Transient Sources	Peak Vibration Threshold (in/sec PPV) Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Notes: in/sec = inches per second; PPV = peak particle velocity
Source: Caltrans 2020

LOCAL

COUNTY OF SACRAMENTO GENERAL PLAN

The County of Sacramento General Plan Noise Element contains policies related to land use and noise compatibility. Relevant County policies are presented for context.

NO-6. Where a project would consist of or include non-transportation noise sources, the noise generation of those sources shall be mitigated so as not exceed the interior and exterior noise level standards of Table NOI-8 at existing noise-sensitive areas in the project vicinity.

NO-8. Noise associated with construction activities shall adhere to the County Code requirements. Specifically, Section 6.68.090(e) addresses construction noise within the County.

NO-12. All noise analyses prepared to determine compliance with the noise level standards contained within this Noise Element shall be prepared in accordance with Table NOI-9.

NO-13. Where noise mitigation measures are required to satisfy the noise level standards of this Noise Element, emphasis shall be placed on the use of setbacks and site design to the extent feasible, prior to consideration of the use of noise barriers.

Table NOI-8. Non-Transportation Noise Standards Sacramento County Noise Element Median (L_{50}) / Maximum (L_{max})[1]

[Table 2 of the Sacramento County General Plan]

Receiving Land Use	Outdoor Area[2]		Interior[3]	
	Daytime	Nighttime	Day & Night	Notes
All Residential	55 / 75	50 / 70	35 / 55	
Transient Lodging	55 / 75	---	35 / 55	4
Hospitals & Nursing Homes	55 / 75	---	35 / 55	5, 6
Theaters & Auditoriums	---	---	30 / 50	6
Churches, Meeting Halls, Schools, Libraries, etc.	55 / 75	---	35 / 60	6
Office Buildings	60 / 75	---	45 / 65	6
Commercial Buildings	---	---	45 / 65	6
Playgrounds, Parks, etc.	65 / 75	---	---	6
Industry	60 / 80	---	50 / 70	6

Notes:

1 The Table NOI-8 standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards of Table NOI-8, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.

2 Sensitive areas are defined acoustic terminology section.

3 Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in closed positions.

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

5 Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.

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

7 Where median (L_{50}) noise level data is not available for a particular noise source, average (L_{eq}) values may be substituted for the standards of this table provided the noise source in question operates for at least 30 minutes of an hour. If the source in question operates less than 30 minutes per hour, then the maximum noise level standards shown would apply.

Source: County of Sacramento General Plan Noise Element 2017. Table 2.

Table NOI-9. Requirements for Acoustical Analyses Prepared in Sacramento County

[Table 3 of the Sacramento County General Plan]

An acoustical analysis prepared pursuant to the Noise Element shall:
A. Be the responsibility of the applicant.
B. Be prepared by qualified persons experienced in the fields of environmental noise assessment and architectural acoustics.
C. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.
D. Estimate projected future (20-year) noise levels in terms of the Standards of Table 2, and compare those levels to the adopted policies of the Noise Element.
E. Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.
F. Estimate interior and exterior noise exposure after the prescribed mitigation measures have been implemented.

SACRAMENTO COUNTY NOISE CONTROL ORDINANCE

Noise control regulations in Sacramento County are specified under Chapter 6.68 of the County Code. The ordinance contains performance standards for the purpose of preventing unnecessary, excessive and offensive noise levels at sensitive receptors within the county. Table NOI-10 includes excerpts from the Noise Control Ordinance.

Table NOI-10. Excerpts from the County of Sacramento Noise Control Ordinance

Noise Area	County Zoning Districts	Time Period	Exterior Noise Standard
1	RE-1, RD-1, RE-2, RD-2, RE-3, RD-3, RD-4, R-1-A, RD-5, R-2, RD-10, R-2A, RD-20, R-3, R-D-30, RD-40, RM-1, RM-2, A-1-B, AR-1, A-2, AR-2, A-5, AR-5	7 a.m.–10 p.m.	55 dB
		10 p.m.–7 a.m.	50 dB

a Noise standards, unless otherwise specifically indicated in this chapter, shall apply to all properties within a designated noise area.

b It is unlawful for any person at any location within the County to create any noise which causes the noise levels on an affected property, when measured in the designated noise area, to exceed for the duration of time set forth following, the specified exterior noise standards in any one hour by:

Cumulative Duration of the Intrusive Sound	Allowance Decibels (dB)
1. Cumulative period of 30 minutes per hour	0
2. Cumulative period of 15 minutes per hour	+ 5
3. Cumulative period of 5 minutes per hour	+10
4. Cumulative period of 1 minute per hour	+15
5. Level not to be exceeded for any time per hour	+20

c. Each of the noise limits specified in subdivision (b) of this section shall be reduced by five dB for impulsive or simple tone noises, or for noises consisting of speech or music.

d. If the ambient noise level exceeds that permitted by any of the first four noise-limit categories specified in subdivision (b), the allowable noise limit shall be increased in five dB increments in each category to encompass the ambient noise level. If the ambient noise level exceeds the fifth noise level category, the maximum ambient noise level shall be the noise limit for that category.

Notes: dB = A-weighted decibels
Source: County of Sacramento Code, Noise Control 1976

Section 6.68.090(e) of the County of Sacramento Code establishes conditions that are considered exempt from the associated provisions, as described below:

> Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided said activities do not take place between the hours of eight p.m. and six a.m. on weekdays and Friday commencing at eight p.m. through and including seven a.m. on Saturday; Saturdays commencing at eight p.m. through and including seven a.m. on the next following Sunday and on each Sunday after the hour of eight p.m. Provided, however, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after eight p.m. and to operate machinery and equipment necessary until completion of the specific

work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

Based on Appendix G of the State CEQA Guidelines, general standards for community ambient noise degradation, and the local standards identified above, the project would have a significant noise impact if it would 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;
- generation of excessive groundborne vibration or groundborne noise levels; or
- for a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels.

In addition to the guidelines and standards presented above, another consideration is the degradation of the existing ambient noise environment due to an increase in the ambient noise levels. With respect to noise levels, a 1-dBA increase is imperceptible, a 3-dBA increase is barely perceptible, a 6-dBA increase is clearly perceptible, and a 10-dBA increase is subjectively perceived as approximately twice as loud. As a result, for operation of the proposed project, a minimally perceptible increase of 3 dBA shall represent a significant increase in ambient noise levels.

For evening and nighttime construction activity, the analysis applies the County noise limits provided on Table NOI-8.

Summary of permitted hours of construction for the Sacramento County are shown in Table NOI-11.

Table NOI-11. Permitted Hours of Construction and Applicable Thresholds in Sacramento County

Noise Parameter	Noise Limit
Monday through Friday	between the hours of 8 p.m. and 6 a.m.
Saturdays	between the hours of 8:00 p.m. and 7:00 a.m.
Sundays and holidays	between the hours of 8:00 p.m. and 6:00 a.m.
Applicable Thresholds (Construction)	The County controls construction noise through limitations on construction hours.
Applicable Thresholds (Operation)	Residential land uses - 55 dBA L_{dn} or less in exterior noise environment, and 35 dBA L_{dn} interior noise levels attributable to exterior noise sources.

Source: County of Sacramento 2023.
dBA = A-weighted decibels
L_{dn} = day-night average noise level.

Issues Not Discussed Further

Excessive Noise from an Airport—Future development would not expose people to excessive noise levels from an airport or private airstrip. Mather Airport is approximately 7.3 miles northwest of the project site, and therefore the project site is not within the boundaries of the Mather Airport Land Use Compatibility Plan or associated noise contours. There are also two smaller local airports in the project vicinity: Rancho Murieta Airport (approximately 3.5 miles to the northeast), and the Sky Way Estates Airport (approximately 4.6 miles to the southwest). Because the project area would not be located in an area exposed to excessive aircraft-generated noise levels (e.g., not within the 60 dB L_{dn}/CNEL contour of any airport), there would be **no impact** related to aircraft noise, and therefore this issue is not discussed further in this EIR.

Methodology

To assess potential short-term, temporary (i.e., construction-related) noise impacts, sensitive receptors and their relative exposure were identified. Noise levels of specific construction equipment were determined and resultant noise levels at those receptors (at given distances from the source) were calculated. Potential long-term (i.e., operational) noise was assessed based on reconnaissance data and documented noise levels. Predicted noise levels during construction and decommissioning are shown in Table NOI-12 that were compared with applicable County standards shown in Table NOI-11 for determination of significance. Table NOI-12 shows the estimated construction noise levels at the residential uses surrounding the project site with their respective distances from the project site boundaries in the north, south, east and west directions.

Table NOI-12. Construction and Decommissioning Noise Levels, dBA

Phase	Anticipated Type of Equipment that May Be Utilized by the Contractor	Est Noise Level at 50 ft (L_{max}, dBA / L_{eq}, dBA)		North 200 ft (L_{eq}, dBA)	North 290 ft (L_{eq}, dBA)	West 1400 ft (L_{eq}, dBA)	Southwest 450 ft (L_{eq}, dBA)	South 750 ft (L_{eq}, dBA)
Construction								
Perimeter Fence Installation	Front End Loader	79	75	65	62	48	58	54
	Pickup Truck	75	71					
	Man Lift	75	68					
	Max. and Combined Noise Level	79	77					
Site Preparation	Grader	85	81	73	70	56	66	61
	Dozer	82	78					
	Roller	80	73					
	Tractor	84	80					
	Max. and Combined Noise Level	85	85					
Grading	Excavator	81	77	74	71	58	67	63
	Grader	85	81					
	Dozer	82	78					
	Scraper	84	80					
	Tractor	84	80					
	Max. and Combined Noise Level	85	86					
Demolition	Dozer	82	78	70	67	53	63	59
	Tractor	84	80					
	Max. and Combined Noise Level	84	82					
Underground Work (Trenching)	Excavator	81	77	69	65	52	62	57
	Roller	80	73					
	Compactor (ground)	83	76					
	Man Lift	75	68					
	Max. and Combined Noise Level	83	81					
PV System Installation	Crane	81	73	82	79	65	75	71
	Man Lift	75	68					
	Flat Bed Truck	74	70					
	Impact Pile Driver	101	94					

Phase	Anticipated Type of Equipment that May Be Utilized by the Contractor	Est Noise Level at 50 ft (L_{max}, dBA / L_{eq}, dBA)		North 200 ft (L_{eq}, dBA)	North 290 ft (L_{eq}, dBA)	West 1400 ft (L_{eq}, dBA)	Southwest 450 ft (L_{eq}, dBA)	South 750 ft (L_{eq}, dBA)
	Pickup Truck	75	71					
	Max. and Combined Noise Level	101	94					
Substation/ Switchyard	Man Lift	75	68	74	70	57	67	62
	Crane	81	73					
	Excavator	81	77					
	Front End Loader	79	75					
	Pneumatic Tools	85	82					
	Man Lift	75	68					
	Tractor	84	80					
	Max. and Combined Noise Level	85	86					
Energy Storage System	Crane	81	73	70	67	53	63	58
	Grader	85	81					
	Man Lift	75	68					
	Max. and Combined Noise Level	85	82					
Gen-Tie Construction	Auger Drill Rig	84	77	68	65	51	61	57
	Crane	81	73					
	Front End Loader	79	75					
	Max. and Combined Noise Level	84	80					
Testing, Commissioning, Site Clean Up	Pickup Truck	75	71	70	67	53	63	59
	Grader	85	81					
	Front End Loader	79	75					
	Max. and Combined Noise Level	85	82					
Decommissioning								
Perimeter Fence Removal	Front End Loader	79	75	65	62	48	58	54
	Pickup Truck	75	71					
	Man Lift	75	68					
	Max. and Combined Noise Level	79	77					
PV System Removal	Crane	81	73	65	62	48	58	54
	Man Lift	75	68					

Phase	Anticipated Type of Equipment that May Be Utilized by the Contractor	Est Noise Level at 50 ft (L_{max}, dBA / L_{eq}, dBA)		North 200 ft (L_{eq}, dBA)	North 290 ft (L_{eq}, dBA)	West 1400 ft (L_{eq}, dBA)	Southwest 450 ft (L_{eq}, dBA)	South 750 ft (L_{eq}, dBA)
	Dump Truck	76	72					
	Pickup Truck	75	71					
	Max. and Combined Noise Level	81	77					
Substation & Switchyard demolition	Man Lift	75	68	73	69	56	66	61
	Crane	81	73					
	Excavator	81	77					
	Flat Bed Truck	74	70					
	Pneumatic Tools	85	82					
	Compactor (ground)	83	76					
	Man Lift	75	68					
	Max. and Combined Noise Level	85	85					
Energy Storage System Removal	Crane	81	73	70	67	54	63	59
	Grader	85	81					
	Front End Loader	79	75					
	Max. and Combined Noise Level	85	83					
Site Cleanup and Restoration	Pickup Truck	75	71	70	67	53	63	59
	Grader	85	81					
	Front End Loader	79	75					
	Max. and Combined Noise Level	85	82					

Notes: CNEL = Community Noise Equivalent Level; dBA = A-weighted decibels; L_{dn} = day-night average noise level; PV = photovoltaic.
Source: FHWA 2006, Data Compiled by AECOM, 2022.

IMPACT NOI-1. TEMPORARY, SHORT-TERM EXPOSURE OF SENSITIVE RECEPTORS TO CONSTRUCTION NOISE

Short-term construction source noise levels could exceed the applicable County standards at nearby noise-sensitive receptors. While the majority of construction activities would conform to the County Noise Ordinance, if construction activities were to occur during more noise-sensitive hours outside of those prescribed by the ordinance, construction source noise levels could result in annoyance and/or sleep disruption to occupants of existing noise-sensitive land uses and create a substantial temporary increase in ambient noise levels. As discussed below, this impact is potentially significant but can be reduced to less than significant with the implementation of recommended

mitigation measures. The project applicant intends to perform all construction activities during the permitted work hours; however, deliveries may need to occur outside of permitted construction hours as may be required by traffic control permits issued for large equipment deliveries. Work may also need to occur during evening hours to meet weather restriction parameters (i.e., excessive heat).

Construction activities associated with the proposed project have the potential to result in varying degrees of temporary noise. Residences located adjacent to areas of construction activity could be exposed to construction noise from on-site construction. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction durations last over extended periods of time.

Major noise-generating construction activities could include site grading and excavation, installation of infrastructure, pile driving, paving, and landscaping. The highest construction noise levels are typically generated during pile driving and during grading and excavation and lower noise levels typically occur during fence installation.

To assess noise levels associated with the various equipment types and operations, construction equipment can be considered to operate in two modes, mobile and stationary. Mobile equipment sources move around a construction site performing tasks in a recurring manner (e.g., loaders, graders, dozers). Stationary equipment operates in a given location for an extended period of time to perform continuous or periodic operations. Thus, determining the location of stationary sources during specific phases, or the effective acoustical center of operations for mobile equipment during various phases of the construction process is necessary. Operational characteristics of heavy construction equipment are additionally typified by short periods of full-power operation followed by extended periods of operation at lower power, idling, or powered-off conditions.

Predicted construction and decommissioning noise levels are shown in Table NOI-12 above, phase by phase, and exposure levels of nearest noise-sensitive uses surrounding the proposed project site. Noise from localized point sources (such as construction sites) typically decreases by 6 dB with each doubling of distance from source to receptor. Given the distance to the nearest sensitive receptor approximately 50 feet north of the project site on Meiss Road, as shown on Table NOI-12 project construction noise levels would range from 77 dB, L_{eq} to 94 dB L_{eq}, at the nearest noise-sensitive uses. This would exceed the existing ambient noise level of 50 dB L_{eq}, measured near this location, as shown on Table NOI-4.

In addition, during the approximately eight-month construction period, daily trip generation would occur for the delivery of equipment and supplies and the commuting of the construction workforce. The number of workers expected on-site during the construction of the project would vary over the construction period and would likely average 150 construction workers (300 total trips per day) that would be employed at the project site during peak construction phases, photovoltaic (PV) System Installation and PV System

Removal. Deliveries of equipment and supplies to the site would also vary over the construction period but have the potential to range from 5 to 40 round trips, averaging approximately 10 daily round trips. During the approximately two months of grading activity, an additional 222 truck trips per day would be generated to haul off excess grading material, resulting in an estimated peak of 602 trips per day during construction (300 worker trips, 80 delivery trips, and 222 haul trips). As shown in Table NOI-13, these number of trips added to existing traffic volumes along the existing nearby roadways would result in a noise increase of up to 3 dB at the nearest noise-sensitive uses from Dillard Road centerlines. However, construction traffic noise would result in a peak noise increase of 14 dB at the nearest noise-sensitive uses from the Meiss Road centerline during the two-month grading period.

Table NOI-13. Summary of Modeled Levels of Existing plus Construction Traffic Noise

Roadway	Segment From	Segment To	Distance	Existing Traffic Noise Level, dB	Construction Traffic Noise Level, dB	Combined Noise Level, dB	Increase Over Existing, dB
State Route 16	West of Dillard Road	East of Dillard Road	50	69.1	62.9	70.1	0.3
Dillard Road	Meiss Road	South of Meiss Road	50	61.6	62.4	65.0	3.4
Meiss Road	Dillard Road	West of Dillard Road	50	49.1	62.4	62.6	13.5

Notes: dB = A-weighted decibels; L_{dn} = day-night average noise level.
Source: Data modeled by AECOM in 2022

Construction activities that occur within the permitted hours (Section 6.68.090(e) of the County of Sacramento Code (refer to Table NOI-11) are exempt from the County noise standards, and as a result would not violate County standards. Thus, the impact of construction noise, including that resulting from construction-related traffic, which occurs during daytime hours conforming to the County Noise ordinance, is considered **less than significant**.

However, project construction could expose existing off-site sensitive receptors to equipment noise levels that exceed the ambient noise conditions during evening and nighttime hours (i.e., outside the hours prescribed in the Noise Ordinance). As noted previously, the nearest sensitive receptor to the project site approximately 50 feet north along Meiss Road and approximately 120 feet from the nearest construction activity and would be subject to noise levels ranging from 77 to 94 dBA under the worst-case assumption that grading and pile driving activities would occur outside of the construction hours permitted in the County Noise ordinance. The project applicant has indicated that if nighttime work were to occur, it would likely be due to weather or traffic control permits. Nighttime construction could exceed the measured ambient noise levels shown in Table NOI-4, as well as the applicable exterior nighttime noise standard of 50 dB provided on

Table NOI-8. Moreover, with the assumption that closed windows would reduce interior noise levels by 25 dB, the resulting interior noise level of 52 to 68 dBA would exceed the interior nighttime noise standard of 35 dB provided on Table NOI-8 as well as the EPA sleep disturbance criteria of 45 dB L_{dn}. Therefore, construction activities occurring during the evening and nighttime hours would result in a **potentially significant impact.**

While noise would attenuate with distance, as shown on Table NOI-12 at a distance of 750 feet most project construction activities would still exceed the ambient levels and the County's exterior nighttime noise standard. However, portions of the project site are sufficiently distant from adjacent receptors to attenuate construction noise to levels below the County's standards, as reflected in the recommended mitigation measure that follows.

Mitigation Measures

NOI-1. For Evening and Nighttime Construction (i.e., outside of permitted construction hours (Section 6.68.090(e) of the County of Sacramento Code), Implement Noise-Reducing Construction Practices and Monitor and Record Construction Noise near Sensitive Receptors.

The project applicant(s) and their primary contractors for engineering design and construction shall ensure that the following requirements are implemented at each worksite during project construction to avoid and minimize construction noise effects on sensitive receptors. The project applicant(s) and primary construction contractor(s) shall employ noise-reducing construction practices. Measures that shall be used to limit noise shall include the measures listed below:

- Pile driving shall be limited to the hours between 7 a.m. and 8 p.m. Monday through Friday, and between 8 a.m. and 6 p.m. on Saturdays and Sundays.
- Noisy construction equipment and equipment staging areas shall be located as far as possible from nearby noise-sensitive land uses.
- All construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.
- All motorized construction equipment shall be shut down when not in use to prevent idling.
- Individual operations and techniques shall be replaced with quieter procedures (e.g., using welding instead of riveting, mixing concrete off-site instead of on-site).
- Noise-reducing enclosures shall be used around stationary noise-generating equipment (e.g., compressors and generators).
- Written notification of construction activities shall be provided to all noise-sensitive receptors located within 500 feet of the project site. Notification shall include anticipated dates and hours during which construction activities are anticipated to occur and contact information, including a daytime telephone

number, for the project representative to be contacted in the event that noise levels are deemed excessive. Recommendations to assist noise-sensitive land uses in reducing interior noise levels (e.g., closing windows and doors) shall also be included in the notification.

- Provide real-time noise monitoring at the boundary of the nearest sensitive receptor(s) during evening and nighttime construction activity occurring outside the hours exempted by the County Noise Ordinance. Any activity resulting in a measured exterior noise level that exceeds 50 dB at the property boundary of an occupied residence shall immediately cease.

Significance after Mitigation

With the implementation of Mitigation Measures NOI-1, impacts from temporary exposure of sensitive receptors to nighttime noise would be reduced. This would entail eliminating certain construction activities at night (i.e., pile driving), using noise enclosures, and locating construction equipment away from sensitive receptors – e.g., given a minimum noise reduction of 6 dB for each doubling of distance, attenuated noise levels of 80 dB at 50 feet would be reduced to 50 dB exterior at 1,600 feet. While this would preclude nighttime construction at peripheral portions of the project site, areas further interior to the perimeter of project site are sufficiently distant from sensitive residential uses to maintain the County's interior nighttime noise standards. To help ensure nighttime construction activity does not exceed County noise standards or result in sleep disturbance construction noise levels would be monitored at or near proximate residences, with activities ceased if measurements exceed the nighttime noise limit of 50 dB. As a result, with implementation of Mitigation Measures NOI-1, the impact would be **less than significant with mitigation.**

Impact NOI-2. Temporary, Short-Term Exposure of Sensitive Receptors to Potential Groundborne Noise and Vibration from Project Construction

Short-term construction and decommissioning activities would not expose sensitive receptors to groundborne noise and vibration levels that would exceed applicable standards that indicate human disturbance or damage to structures could result. As a result, and as detailed in the discussion that follows, this impact is considered less than significant.

The movement and operation of the project's construction equipment may generate temporary groundborne vibration and have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used, the location of construction activities relative to sensitive receptors, the operations/activities involved, and the construction material of the vibration-sensitive uses (the buildings and houses) affected. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance (approximately 9 VdB per doubling of distance from the source). The type and density of

soil can also affect the transmission of energy. Table NOI-14 provides vibration levels for typical construction equipment.

Table NOI-14. Typical Vibration Levels for Construction Equipment

Equipment	PPV at 25 Feet (in/sec)	Approximate Lv at 25 Feet
Pile Driver (Impact) – Upper Range	1.518	112
Pile Driver (Impact) – Typical	0.644	104
Pile Driver (Sonic) – Upper Range	0.734	105
Pile Driver (Sonic) – Typical	0.170	93
Vibratory Roller	0.210	94
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Truck	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Notes: in/sec = inches per second; Lv = the velocity level in decibels referenced to 1 microinch per second and based on the root mean square velocity amplitude; PPV = peak particle velocity
Sources: Caltrans 2020, FTA 2018.

Caltrans has developed criteria that are commonly applied as an industry standard to determine the impacts of project vibration relative to human annoyance and structural damage. Caltrans determines that the vibration level of 80 VdB (0.04 in/sec PPV) would be distinctly perceptible. Therefore, remaining less than 80 VdB at residential uses would avoid human annoyance. Also, Caltrans recommends staying below 0.3 in/sec PPV at older residential structures and below 0.5 in/sec PPV for new residential structures (Table NOI-7), to avoid structural damage (Caltrans 2020).

The construction equipment for the proposed project mostly would include maximum generation of vibration from trucks and bulldozers. The vibration level associated with the use of a large bulldozer is 0.089 in/sec PPV (87 VdB) at 25 feet (FTA 2018). The vibration-sensitive uses (buildings) nearest to the construction sites are the residential structures that are approximately 200 to 1,400 feet away. At these distances, the most substantial vibration generated by project construction equipment would attenuate (at 9 VdB per doubling of distance) to less than 60 VdB and 0.004 in/sec PPV, which would be less than the criteria of 80 VdB and 0.5 in/sec PPV recommended by Caltrans. Also, vibratory rollers are frequently used for backfill and paving work. As shown in Table NOI-14, vibratory rollers have a higher reference value of 0.21 in/sec PPV at 25 feet (Caltrans 2020). The resulting vibration level from vibratory roller would be 67 VdB and 0.009 in/sec PPV at a distance of 200 feet (the nearest sensitive uses), which would be below the 0.5 in/sec PPV recommended by Caltrans for structural damage, and above the criteria of 80 VdB for annoyance. Pile driving would occur in on-site PV System Installation. As shown in Table NOI-14, typical pile driving would generate vibration levels of up to 0.644 in/sec PPV and 104 VdB at a distance of 25 feet. This level, at the sensitive uses nearest to the

project construction, would attenuate to less than 77 VdB and 0.028 in/sec PPV, which would be less than the criteria of 80 VdB and 0.5 in/sec PPV recommended by Caltrans. Therefore, short-term construction of the project would not exceed the threshold for structural damage, and would not expose persons to or generate excessive groundborne noise or vibration. For these reasons, this impact would be considered **less than significant**.

IMPACT NOI-3. PERMANENT EXPOSURE OF OFF-SITE NOISE-SENSITIVE RECEPTORS TO GENERATION OF NON-TRANSPORTATION NOISE LEVELS IN EXCESS OF LOCAL STANDARDS

The proposed project would introduce non-transportation noise sources from the operation and maintenance of the solar panels. These non-transportation noise sources would not exceed the applicable noise standards and would not result in a substantial increase in ambient noise levels. Therefore, as detailed in the discussion that follows, this impact is considered less than significant with mitigation.

As described in Chapter 2, Project Description, the project would include the installation of solar panels and associated facilities that include inverters, transformers, and a gen-tie facility at the existing substation. Table NOI-15 provides the estimated noise level from these facilities at a given distance. Operations of the solar panels would be nearly silent, with small amounts of noise on-site caused by the tracking motors. As provided on Table NOI-15 the average sound level of tracker motors at a distance of 1 foot is 58 dBA and at a distance of 10 feet it is reduced to 46.5 dBA, at which point it is generally no longer discernable from background noise (City of Adelanto 2020). Moreover, tracker motors would not be operational during the nighttime when the panels are not generating power.

Table NOI-15. Estimated Noise Rating of Project Facilities

Equipment	Reference Noise Level (dBA L_{eq})	Distance from Source (feet)	Noise Level at 50 feet, (dBA L_{eq})
Gen-Tie 1	20	50	20
PV Panel	44	50	44
Inverter (unenclosed)	52	75	56
Inverter (enclosed with HVAC system)	58	75	62
Transformer	58	3.3	34
Battery Energy Storage Systems	79	5	59
Solar Panel Tracking Motors	58	1	24

Notes: dBA = A-weighted decibel(s); HVAC = Heating Ventilation and Air Conditioning; L_{eq} = Equivalent Sound Level; PV = photovoltaic

Sources: U.S. Department of Energy 2011; San Luis Obispo County 2011; Illingworth and Rodkin 2009; Kern County 2014; Monterey County 2014; Marvair ComPac I & ComPac II 2-6 Vertical All Mount Air Conditions, Models AVP24-30-36-42-48-60-72

As shown on Table NOI-15, the highest operational noise levels would occur from the inverter and Heating Ventilation and Air Conditioning (HVAC) system (i.e., 62 dBA at 50 feet). Because the project would provide backup battery power, the inverter/HVAC facilities would be operational during evening and nighttime hours. To comply with the County's exterior nighttime noise limitation of 50 dB as provided in Table NOI-8, based on a noise rating of 62 dBA at 50 feet from the inverter and HVAC system, such facilities would need to be located approximately 200 feet from the nearest noise-sensitive land use. Since the nearest residences along Meiss Road are approximately 50 feet north of the project site (refer to Plate NOI-2, Sensitive Land Use and Noise Monitoring Locations for the location of nearby residences and Plate PD-6, Conceptual Site Plan for the proposed site plan and layout), noise levels from the inverter and HVAC system would be **potentially significant**.

Mitigation Measures

NOI-2. Site Project Facilities Sufficiently Distant to Reduce Operational Noise Levels Below County General Plan Standards.

- Prior to issuance of building permits, the applicant shall provide sufficiently detailed designs demonstrating that operation of the proposed project facilities would not exceed County noise standards as prescribed by Table 2 of the County General Plan Noise Element, including the nighttime standard of 50 dB L_{50}. The design of the facility shall be based on reference noise levels for operation equipment (e.g., transformer) from the manufacturer's specifications document, enclosure type and material, and calculations demonstrating that the siting of the project facilities is sufficiently distanced and the project's operational noise is reduced to comply with the applicable County noise standards.
- Upon request from the County in instances when complaints are received, the applicant shall provide an acoustical analysis consistent with the requirements provided in the Noise Element of the County General Plan.

Significance after Mitigation

Implementation of Mitigation Measure NOI-2 would serve to ensure that noise-generating facilities are designed and sited in a manner (i.e., distanced or enclosed) that reduces noise levels to below the applicable County noise standards. As a result, the noise impact resulting from operation of the proposed project facilities would be **less than significant with mitigation.**

Maintenance activities for the proposed project would include periodic inspections, and as-needed repair or replacement of the panels or platforms, power distribution facilities, and fencing. Additional activities would include ongoing agricultural operations (e.g., sheep grazing) and weed management as needed, and periodic panel washing. Due to the limited scale, intensity, and periodic frequency of these activities, the associated noise impact during proposed project operations would be **less than significant**.

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11 TRAFFIC AND CIRCULATION

INTRODUCTION

This chapter evaluates potential impacts resulting from the additional vehicles added to the roadway system during construction and operation of the proposed project, and associated effects related to emergency access and traffic hazards. This chapter also addresses the potential for the project to conflict with a transportation program, plan, or ordinance and CEQA Guidelines Section 15064.3(b).

ENVIRONMENTAL SETTING

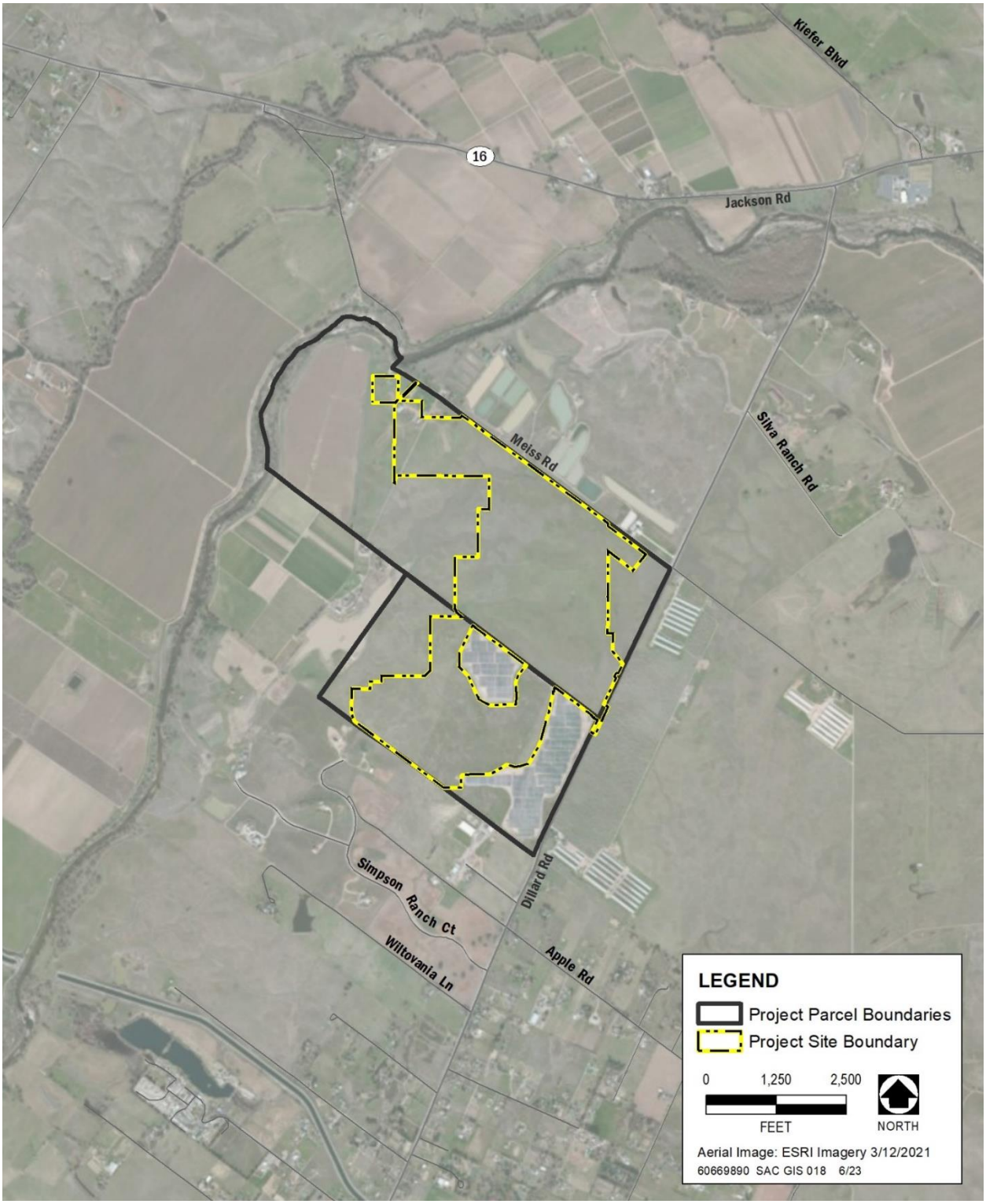
Roadways within one mile of the project site are shown on Plate TC-1 and include:

- **Dillard Road** is a two-lane roadway (one lane in each direction) between SR 16 and SR 99. Dillard Road runs generally north-south along the eastern boundary of the project site parcels. It travels through rural lands and through the town of Wilton, and parallel to the Cosumnes River to the west. Measured 24-hour traffic volumes on Dillard Road at Meiss Road ranged from 4,032 to 5,410 daily vehicles during measurements taken from 2015 through 2019 (Dudek 2022). Assuming that peak-hour traffic represents 10 percent of daily traffic, peak-hour traffic is estimated to be approximately 500 vehicles per hour.

- **State Route (SR) 16** (also known as Jackson Road) is a state highway that runs from SR 20 in Colusa County to SR 49 just outside Plymouth in Amador County, primarily crossing the Sacramento Valley. Much of the route travels through the Sacramento area and is unsigned as it runs generally east-west and roughly equidistant from Interstate 5 (I-5) and US 50. In the project area, it has one lane in each direction and a turn lane to the south onto Dillard Road, where the project site is accessed about one mile to the south. The intersection with Dillard Road is signal controlled. The segment of SR 16 at Dillard Road near the project site had an annual average daily traffic volume of 14,200 (west of Dillard Road) and 14,700 (east of Dillard Road) in 2019 according to the Caltrans Traffic Census Program (Caltrans 2022). Assuming that peak-hour traffic represents 10 percent of daily traffic, peak-hour traffic is estimated to be approximately 1,500 vehicles per hour.

- **Meiss Road** is a two-lane road that runs between Cosumnes River (where there is an abandoned bridge that used to connect the roadway to SR 16) to the west and Iona Road to the east, crossing Dillard Road near the northeast portion of the project site. Meiss Road bounds the northern portion of the project site.

Plate TC-1: Roadways in the Project Vicinity



Several roadway segments provide access to private property in the vicinity of the project site:

- **Silva Ranch Road** is a narrow, two-lane road that extends east off Dillard Road approximately 0.5 mile north of the project site.
- **Apple Road** is a narrow, two-lane road in the town of Wilton that extends east off of Dillard Road directly south of the project site and turns into Riza Road shortly before it dead ends to the east.
- **Simpson Ranch Court** is a two-lane road in the town of Wilton that extends west off Dillard Road and dead ends just south of the project site.
- **Wiltovania Lane** is a two-lane road, also called Apple Road and Steiner Marks, south of the project site and Simpson Ranch Court. It extends west off Dillard Road and dead ends at several residences.

The Sacramento County *Bicycle Master Plan* included a planned Class II bike lane adjacent to the project site along Dillard Road that would extend south from SR 16 to SR 99 (Sacramento County 2011). This plan has been superseded by the Sacramento County *Active Transportation Plan*, which also includes the planned Class II bike lane along Dillard Road (Sacramento County 2022a). There are no other existing or planned transit, bicycle, or pedestrian facilities in the vicinity of the project site.

Regulatory Setting

The following provides a summary of pertinent transportation plans, programs, policies and ordinances.

Local

County of Sacramento General Plan

The main theme of the Sacramento County General Plan Circulation Element is to provide a range of transportation choices (Sacramento County 2022b). Its intent is to invest in all travel modes so that the residents and workers have access to more than one realistic and efficient transportation alternative. The General Plan directs integrated and balanced investment in the transportation system: roadway, public transit system, bicycling and pedestrian infrastructure. The General Plan's Circulation Element consists of the Transportation Plan and Transportation Policy Plan.

The following General Plan policy related to transportation and circulation may pertain to the proposed project. The associated environmental impact related to this policy is addressed in the Impacts and Analysis section further below.

CI-10. Land development projects shall be responsible to mitigate the project's adverse impacts to local and regional roadways.

Transportation Improvement and Program Guide (TIPG)

The Sacramento County Transportation Improvement Program Guide (TIPG) presents the capital improvement plan and the maintenance and operations programs for unincorporated area roadway, bikeway, and pedestrian systems for implementation in the next 5 years (Sacramento County 2019). The TIPG supports the County General Plan.

Transportation Analysis Guidelines

For certain projects the Department of Transportation requires Local Transportation Analyses (LTA), which are traffic studies. Projects subject to an LTA would 1) generate 100 or more new a.m. or p.m. peak hour vehicle trip-ends, 2) generate 1,000 or more daily vehicle trip-ends, or 3) are likely to cause or substantially contribute to traffic congestion or safety issues. The purpose of the LTA is to ensure compliance with the multimodal policies in the General Plan; these include level of service (LOS)[1], safety, transit service, and a comprehensive, safe, convenient, and accessible bicycle and pedestrian system. The project analysis includes conditions to provide any recommended improvements necessary to comply with General Plan policies. Depending on the project, the Department of Transportation may require additional analysis of other roadway elements such as turn pocket queuing, drive-thru queuing, traffic signal warrants, traffic safety, neighborhood cut-through traffic, truck impacts, access control, and phasing analysis. The County's *Transportation Analysis Guidelines* (Sacramento County 2020) provide the requirements and guidance for preparing an LTA.

The *Transportation Analysis Guidelines* have been updated to reflect SB 743 and reflected in the CEQA Guidelines Section 15064.3. As noted in the County's guidelines, the intent of SB 743 is to bring CEQA transportation analyses into closer alignment with other statewide policies regarding greenhouse gases, complete streets, and smart growth. Using vehicle miles travelled (VMT) as a performance measure instead of LOS is intended to discourage suburban sprawl, reduce greenhouse gas emissions, and encourage the development of smart growth, complete streets, and multimodal transportation networks. The current County guidelines provide methodologies for transportation engineers and planners to conduct CEQA transportation analyses for land development and transportation projects in compliance with SB 743. Notably, the County guidelines include the following screening criteria for projects that are expected to result in less-than-significant VMT impacts:

- Projects generating less than 237 average daily traffic (ADT)

[1] Level of service (LOS) is a qualitative measure used to relate the quality of motor vehicle traffic service. LOS is used to analyze roadways and intersections by categorizing traffic flow and assigning quality levels of traffic based on performance measure like vehicle speed, density, congestion, etc.

- Local-serving public facilities/services, including utility facilities[2]

IMPACTS AND ANALYSIS

Local access to the project site would be from Dillard Road. Access to components of the solar field would be controlled through security gates at several entrances. Multiple gate restricted access points would be used during construction and operation.

During the approximately eight-month construction period, daily trip generation would occur for delivery of equipment and supplies and the commuting of the construction workforce. The number of workers expected on-site during construction of the project would vary over the construction period and would likely average 150 workers per day. Deliveries of equipment and supplies to the site would also vary over the construction period but have the potential to range from 5 to 40 round trips, averaging approximately 10 daily round trips. During the approximately two months of grading activity, an additional 222 truck trips per day would be generated to haul off excess grading material, resulting in an estimated peak of 602 trips per day generated during construction (300 worker trips, 80 delivery truck trips, and 222 haul truck trips). Parking for project-related vehicles would be provided on-site during construction. As construction progresses, the parking area would be relocated adjacent to new project phases.

SIGNIFICANCE CRITERIA

Based on Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact related to aesthetics if it would:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b);
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Result in inadequate emergency access.

[2] Appendix A to the County's Transportation Analysis Guidelines classify both Major Utility and Solar Energy Facility land uses as local-serving public facilities/service (LPFS), and thus meet the screening criteria to not require preparation of a VMT analysis.

IMPACT TC-1: CONFLICT WITH A PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING THE CIRCULATION SYSTEM, INCLUDING TRANSIT, ROADWAY, BICYCLE, AND PEDESTRIAN FACILITIES

CONSTRUCTION

Regionally, access to the project site would be provided primarily by SR 16. Local access to the project site would be from Dillard Road and Meiss Road. The project does not include any permanent changes to the public roadway network. Temporary construction activities would be geographically limited to the internal project site. As a result, the direct impacts of construction would not substantially impact the area's public roadways.

Up to 80 daily construction-related truck trips for delivery of materials would be spread over an 8-hour workday during the construction period. In addition, an average of 150 worker trips would occur during the a.m. and p.m. hours before and after each workday, resulting in a total of up to 380 daily vehicle and truck trips added each day to local roadways during construction. However, during the approximately two months of grading activities, an additional 222 truck trips per day would be added to local roadways to dispose of excess grading material, resulting in a peak of 602 trips generated per day during construction (300 worker trips, 80 delivery truck trips, and 222 haul truck trips).

Relative to existing traffic volumes noted above in the "Environmental Setting", this represents a short-term increase in daily traffic of about 3 to 4 percent on SR 16. On Dillard Road, construction would temporarily increase daily traffic by about 8 percent, with a peak increase of about 13 percent during the two-month grading period. Specific to peak-hour traffic volumes (i.e., during the morning and evening commute times), the addition of 150 worker vehicle trips would increase peak-hour commute traffic on Dillard Road by about 32 percent. However, according to the Federal Highway Administration, as a rural two-lane highway with two-way stop control, Dillard Road has a capacity of approximately 1,200 vehicles per hour (FHWA 2017). Thus, given the estimated peak-hour traffic volume on Dillard Road of about 500 ADT, the temporary addition of 150 peak-hour vehicles during construction would not substantially alter existing roadway capacity and would not substantially affect traffic circulation during typical commute times.

In sum, the effect on daily and peak-hour traffic volumes would be temporary, limited to the estimated eight-month construction period, and the additional vehicles would not substantially alter existing roadway capacity. Given the limited duration of construction activity and existing capacity on local roadways, project construction is not anticipated to conflict with any applicable plan, policy or ordinance related to the transportation system that could result in a substantial adverse environmental effect. In accordance with the County's *Transportation Analysis Guidelines*, to the extent that LOS is temporarily degraded by short-term construction activities, the County would address the issue in terms of General Plan consistency rather than as an environmental impact subject to CEQA analysis and mitigation.

No bus stops, pedestrian and bicycle facilities are located near the project site, and as a result there would be no impact from project construction. Similarly, temporary

construction activities would not impede or otherwise conflict with implementation of the planned Class II bike lane along Dillard Road. Thus, construction of the proposed project would not have a substantial adverse effect on the area's roadways or other existing or planned transportation facilities. Therefore, the impact of project construction on traffic circulation, or transit, bicycle and pedestrian facilities would be **less than significant**.

Operation

The project would be operated remotely through a local solar operations and maintenance company once constructed. The estimated 4 to 10 daily trips generated during operations would not be considered substantial. One to four times per year, panel washing would occur for up to two weeks. However, this activity would involve limited equipment and approximately 10 staff, and thus would fall within the existing range of daily trips and would not have the potential to substantially increase traffic volumes and impact the local or regional circulation system. The County's policies to encourage bicycle, pedestrian, and transit use are related to other types of development – residential, office, commercial, and civic uses where patrons, residents, and employees can be encouraged to use alternatives to a private vehicle to reach daily destinations. Such policies are not relevant to the project, particularly considering the anticipated extremely low level of operational trips.

Due to the limited changes resulting from project operations, the impact on traffic circulation, transit, bicycle, and pedestrian facilities would be **less than significant**.

Impact TC-2: Conflict or be Inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b)

Construction and Operation

The Sacramento County *Transportation Analysis Guidelines* (Sacramento 2020) provide that if a project meets the County's screening criteria, a detailed CEQA transportation analysis of VMT would not be required. The screening criteria for projects that are expected to result in less than significant VMT impacts are presented in Table 3-1 of the County's *Transportation Analysis Guidelines*; the applicable criteria from the guidelines as they relate to the proposed project include:

- Small projects that generate less than 237 ADT – while this project may not be considered "small" based on its physical footprint, it is consistent with a "small project" based on trip generation. Daily trip generation during operation of the project would average 4 to 10 trips per day. This is well below the threshold of 237 average daily trips provided in the County guidelines. Operational impacts would generate less than the daily trips threshold.

- Local-Serving Public Facilities/Services including utilities – The power generated by the proposed solar facilities would connect with the Sacramento Municipal Utility District's (SMUD's) 69 kV powerlines. The project meets the screening criteria as a local-serving public utility and solar energy facility.

Because VMT analysis is intended to capture the long-term impacts of a proposed project, construction activities are not typically subject to VMT analysis. As a result, no analysis of construction VMT is warranted (Sacramento County 2020, page 10). Moreover, the project's operational characteristics meet the above screening criteria as both a small project and a local-serving utility, and thus detailed CEQA transportation analysis of operational VMT is not required. Therefore, consistent with the County *Transportation Analysis Guidelines*, there is no conflict with CEQA Guidelines Section 15064.3 and the VMT impact associated with the project would be **less than significant**.

While VMT is now the preferred methodology for assessing transportation impacts under CEQA, other programs, plans, ordinances and policies related to LOS are considered during a project's approval phase to the extent that such standards are present in applicable local plans (e.g., General Plan) and guidelines. However, no further analysis is warranted for purposes of this document as relates to County plans, policies, and guidelines that relate to LOS.

IMPACT TC-3: SUBSTANTIALLY INCREASE HAZARDS DUE TO A GEOMETRIC DESIGN FEATURE (E.G., SHARP CURVES OR DANGEROUS INTERSECTIONS) OR INCOMPATIBLE USES (E.G., FARM EQUIPMENT)

CONSTRUCTION

Primary access to the project site would be from Dillard Road and Meiss Road. As described above, access to components of the solar field would be controlled through security gates at several entrances. Multiple gate-restricted access points would be used during construction and operation. The project does not include any permanent changes to the geometry of the area roadways. As a result, no impact would result from project construction or operations.

Temporary facilities would be developed on-site during construction to facilitate the construction process. These facilities may include construction trailers, temporary septic systems or holding tanks, parking areas, material receiving / storage areas, water storage ponds, construction power service, recycling / waste handling areas, and others. However, these facilities and associated construction activities would be limited to the project site, and are not expected to directly impact surrounding public roadways.

While project construction would introduce additional traffic movements and oversized haul vehicles to the local road network, construction traffic is common throughout the County and is not considered an "incompatible use." However, given the scale of the project and rural setting in which the project would be constructed, the temporary addition of oversize vehicles, haul trucks and worker vehicles could increase traffic hazards and the resulting impact would be **potentially significant**.

To address this potentially significant impact, Mitigation Measure TC-1, below, requires a traffic control plan to be prepared in accordance with the California Manual of Traffic Control Devices. Pending final project design, the requirement for a traffic control plan may be triggered by the County encroachment permit process if any portion of Dillard

Road or Meiss Road right-of-way would be temporarily occupied or altered during construction. However, if no encroachment permit is required, the project would still be subject to a traffic control plan to address the potentially significant impact and to provide consistency with the County General Plan Policy CI-10, which requires land development projects to mitigate adverse impacts on local and regional roadways.

Mitigation Measures

TC-1. Prepare and Implement Traffic Control Plan.

> To address potential traffic hazards during construction, prior to the commencement of construction or demolition activities the applicant shall prepare a traffic control plan for review and approval by the County Department of Transportation. Typical measures to be included in the traffic control plan include signage, traffic cones, and flaggers to help ensure safe and efficient movement of traffic through the affected area. In addition, the traffic control plan would provide for notification of emergency responders regarding the planned construction activities.

Significance after Mitigation

Implementation of the above mitigation measure would limit the potential for traffic hazards to occur during construction by providing sufficient warning to motorists passing by the project site and features such as flaggers and traffic cones that would minimize conflicts with construction vehicles and equipment. As a result, the potential impact related to traffic hazards would be **less than significant with mitigation**.

Operation

Project operations would involve limited traffic volumes as the project would be operated remotely. Periodic maintenance and panel washing activities would not generate substantial traffic or involve conflicts on adjacent roadways that would result in traffic hazards. The impact during project operations would be **less than significant**.

Impact TC-4: Result in Inadequate Emergency Access

Construction

Temporary facilities would be developed at the project site during construction to facilitate the construction process as described above. Construction impacts would generally be limited to on-site, and not directly impact the area's public roadways or substantially impede access to or from nearby properties. As a result, the impact of the project during construction would be **less than significant**. To the extent that emergency access in the project vicinity could be temporarily impeded during construction, the measures provided in the traffic control plan described above would serve to ensure that sufficient emergency access is available for the duration of the construction period.

Operation

Access to the project site would be from Dillard Road and Meiss Road. The project does not include any permanent changes to the public roadway network. Access to the project site during operations would be controlled at several gates; maintenance and security-related vehicle trips are not expected to exceed 10 trips per day. Remote operational staff and staff on-site would have the ability to control the gates to allow emergency access, as needed. As a result, **no impact** on emergency access would result from project operations.

12 TRIBAL CULTURAL RESOURCES

INTRODUCTION

This chapter describes the environmental and regulatory setting for tribal cultural resources (TCRs) in the project area, identifies and analyzes impacts to TCRs from implementation of the Sloughhouse Solar project, and, if necessary, recommends mitigation measures to reduce or eliminate significant impacts. TCRs are separate and distinct from cultural resources, which are discussed in Chapter 8, Cultural and Paleontological Resources.

TCRs include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either listed on or determined to be eligible for inclusion on the California Register of Historical Resources or included in a local register of historical resources, or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant. TCRs provide the backdrop to:

- religious understanding;
- traditional stories;
- knowledge of resources, such as varying landscapes, bodies of water, animals and plants; and
- self-identity.

TCRs may contain physical cultural remains or may be places within a landscape. A cultural landscape that meets these criteria is a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. Historical resources, unique archaeological resources, or non-unique archaeological resources may also be TCRs if they meet these criteria.

ENVIRONMENTAL SETTING

The proposed project site is generally located west of Dillard Road, east of the Cosumnes River, and south of Meiss Road in unincorporated Sacramento County, California. The rural setting is surrounded primarily by agricultural parcels except for the northwestern portion of the project area which is bordered by the Cosumnes River. The project area is in the indigenous tribal territory of the Plains Miwok.

PLAINS MIWOK ETHNOHISTORY

The region surrounding and including the project site was in Plains Miwok tribal territory during the ethnohistoric period (i.e., the time period after year 1750). This group inhabited the region of the lower Mokelumne and Cosumnes Rivers, roughly bounded by the Yolo

Basin to the west, the American River to the north, the Sierra Nevada to the east, and the Calaveras River to the south. A relatively high population of indigenous inhabitants occupied this region; as noted in the early work of Stephen Powers in the 1870s, when accounting for all of the discrete groups, the Miwok were "by much the largest nation in California, both in population and in extent of territory" (Dudek 2021).

Plains Miwok habitation areas were most commonly situated along rivers, often on natural levees. Traditional village features included acorn granaries, conical house structures, and sweat and ceremonial houses. The Plains Miwok subsistence strategy was centered on fishing, hunting, and collecting vegetative resources. This group was logistically mobile, with larger central habitation areas and surrounding satellite sites used during hunting excursions and for pre-processing of collected plant resources, such as acorns. Common food items included deer, rabbits, birds, bear, rodents, other mammals of small and moderate size, and various insects. Common tools included the bow and arrow, traps, harpoons, hooks, nets, portable and stationary grinding implements, and pestles and handstones (Dudek 2021). No precontact[1] cultural resources have been identified in the project area.

Native American Communities

Of the tribes contacted to consult under Assembly Bill (AB) 52, the United Auburn Indian Community (UAIC) and the Wilton Rancheria actively participated. The following provides a summary of the current status provided by the tribes. Precontact context is provided in Chapter 8, Cultural and Paleontological Resources.

Wilton Rancheria

Wilton Rancheria is a federally recognized tribe. The land the Tribe's ancestors inhabited was located along a path of massive death and destruction of California Indians caused by Spanish, Mexican, and American military incursions, disease, and slavery, and the violence accompanying mining and settlements (Wilton Rancheria 2022). Between March 1851 and January 1852, three commissioners hastily negotiated eighteen treaties with representatives of some of the indigenous population in California. The Treaty of the Forks of the Cosumnes River ceded the lands on which the Wilton Rancheria in Sacramento County was later established, but promised to establish a rancheria on the Cosumnes River.

The Tribe's ancestors came back from nearly being annihilated only to have their children taken to boarding schools that stripped their indigenous language and culture further. Finally, in July 1928, the United States acquired land in trust for the Miwok people that were living in Sacramento County. A 38.77-acre tract of land in Wilton was purchased from the Cosumnes Company which formally established the Wilton Rancheria. However,

[1] Precontact archaeological resources are those that predate Native American contact with Europeans. In California, the precontact period continued well into the eighteenth century as late as AD 1769 with the Spanish exploration of what is now San Francisco Bay by Gaspar de Portolá (Dudek 2021).

under the California Rancheria Act of 1958, the federal government terminated federal recognition of the tribe in 1964.

In 1991, surviving members of Wilton Rancheria reorganized their tribal government and in 1999 requested the United States formally restore their federal recognition. A United States District Court Judge restored Wilton Rancheria as a Federally Recognized Tribe in 2009 and its administration office is located in the city of Elk Grove (Wilton Rancheria 2022).

United Auburn Indian Community

The UAIC of the Auburn Rancheria is a federally recognized tribe. The reestablishment of the UAIC Tribe began when the United States Department of Interior documented the existence of a separate, cohesive band of Maidu and Miwok Indians, occupying a village on the outskirts of the city of Auburn in Placer County. In 1917, the United States acquired land in trust for the Auburn Band near the city of Auburn and formally established a reservation, known as the Auburn Rancheria. Tribal members continued to live on the reservation as a community despite great adversity (UAIC 2022).

In 1953, the United States Congress enacted the Rancheria Act, authorizing the termination of federal trust responsibilities to a number of California Indian tribes including the Auburn Band. With the exception of a 2.8-acre parcel containing a tribal church and a park, the government sold the land comprising the Auburn Rancheria. The United States terminated federal recognition of the Auburn Band in 1967.

In 1991, surviving members of the Auburn Band reorganized their tribal government as the UAIC and requested the United States to formally restore their federal recognition. In 1994, Congress passed the Auburn Indian Restoration Act, which restored the Tribe's federal recognition. The Act provided that the Tribe may acquire land in Placer County to establish a new reservation (UAIC 2022). In 2002, the UAIC acquired 49.21-acres under a land trust with the Bureau of Indian Affairs (BIA) to build and operate a casino (BIA 2002).

In 2018, UAIC entered into another land trust with the BIA for 1,100 acres in Placer County to build 110 single-family homes and other amenities for tribal members (Indian Country Today 2010).

Records Search Results

On October 9, 2020, a records search was completed for the project Area of Potential Effect (APE), which is defined as the project site consisting of all areas subject to ground disturbance, and a 0.5-mile buffer, by staff at the North Central Information Center (NCIC) at California State University, Sacramento. The records search did not identify any potential TCRs within the project site, but did identify several sensitive precontact sites within a 0.5-mile radius of the project site within the APE.

NATIVE AMERICAN CONSULTATION AND COORDINATION

On November 16, 2020, a request for a Sacred Lands File records search and Native American contact list for the project area was sent to the California Native American Heritage Commission (NAHC). The NAHC responded on December 3, 2020, with a negative result of any known Native American resources on file with the NAHC within the project area and provided a list of Native American tribal contacts who may have additional knowledge relating to cultural resources in the area.

On September 1, 2021, pursuant to AB 52, Sacramento County staff sent formal notification letters to tribes who previously requested to be notified of Sacramento County projects. The AB 52 notification package included a brief cover letter, complete project description, and cultural report. All tribes were then sent a copy of the Notice of Preparation for this project on October 22, 2021.

Responses were received from the UAIC on September 14, 2021, and from the Wilton Rancheria on November 16, 2021. Following is a summary of requests and communication between UAIC, the Wilton Rancheria, and the County:

- UAIC requested an on-site meeting to discuss the project and survey the site.
- UAIC staff, County staff, and an applicant representative met on November 12, 2021. Verbally, UAIC staff noted that Native American monitoring during initial ground disturbance should be sufficient to reduce potential impacts to TCRs.
- Follow up email on January 11, 2022, confirmed UAIC's recommendation for monitoring during initial ground disturbance for the project.
- An additional follow up email on February 3, 2022, with UAIC staff confirmed tribal monitoring and unanticipated discoveries mitigation for the project.
- Wilton Rancheria requested additional information about the project, including cultural reports.
- The County responded to Wilton Rancheria via email (December 22, 2021) and re-sent the AB 52 notification package and provided anticipated mitigation measures for the project.
- Wilton Rancheria responded via email (January 10, 2022), that with implementation of tribal monitoring, they did not have further questions or concerns.

The following comments relating to TCRs were received during the public scoping period in response to the Notice of Preparation (NOP) that was published on October 22, 2021 (see Appendix PD-2):

- Cultural Resources and TCR chapters and mitigation measures should be separate and distinct.

- Identification and evaluation of TCRs should be no less rigorous than archaeological resources and can only be accomplished through tribal consultation.
- Provided a non-exhaustive list of recognized TCR resource types.
- Do not refer to tribes and their ancestors as “prehistoric.”
- Request for levels of analysis for topics relating to TCRs.

FIELD ASSESSMENT

Qualified archaeologists conducted an intensive-level pedestrian survey of the entire project site on October 20–28, 2020 and recorded a historic-age former home site and the concrete footings of a previously recorded historic-age bridge. Due to a lack of surface visibility across the project area at the time of survey and the potential for buried cultural deposits in the vicinity of the Cosumnes River, as identified by the NCIC, auger probes were excavated to probe for buried cultural deposits and assess the soil profile in several areas of the project site. None of the augers encountered cultural deposits or soils indicative of human activity, nor were there indications of distinct soil horizons indicative of buried surfaces.

However, based on the landforms, soil development, and surface visibility observed during the survey, there is moderate potential for the presence of previously undiscovered deposits, particularly in the area between the Cosumnes River and the levee, since several sensitive precontact sites were identified within a 0.5-mile radius of the project site within the APE. Poor visibility and soil formation processes in the project site suggest that buried deposits or small surface sites could also be present elsewhere in the APE.

REGULATORY SETTING

FEDERAL

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT, 1966

Federal regulations for cultural resources are governed primarily by Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended). Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and affords the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. The ACHP’s implementing regulations are the “Protection of Historic Properties” 36 Code of Federal Regulations (CFR) Part 800. The Federal agency first must determine whether it has an undertaking that is a type of activity that could affect historic properties. Historic properties are those that meet the criteria for or are listed in the NRHP.

TRADITIONAL CULTURAL PROPERTIES

Traditional Cultural Properties (TCPs) are resources eligible for the NRHP based on cultural significance derived from the “beliefs, customs, and practices of a living

community of people that have been passed down through the generations" ([NPS] 1998:1). TCPs embrace a wide range of historic properties, such as the location associated with a Native American group's origin or the origin of the world (cosmogony), or an urban neighborhood that is the traditional home of a particular cultural group and that still reflects and is associated with their beliefs and practices. Other examples include places where traditional people historically have gone and continue to visit for ceremonial practices. These examples are not intended to be exhaustive, but instead to illustrate the range of possible TCPs. The NPS National Register Bulletin 38 defines a historical property as a place that is eligible for NRHP inclusion "because of its association with cultural practices or beliefs of a living community that (a) are rooted in the community's history and (b) are important in maintaining the continuing cultural identity of the community" (NPS 1998:1). The identification and evaluation of TCPs can be conducted only by consultation with members of the relevant group of people that ascribe value to the resource, or through other forms of ethnographic research.

EVALUATION OF TCPS

Federal agencies must evaluate TCPs for eligibility for listing in the NRHP to determine if they are historic properties subject to management as required under Section 106 of the NHPA. Evaluation of TCPs requires two major steps: first the Federal agency evaluates the integrity of the resource as a TCP, then evaluates the resource for eligibility listing on the NRHP under the process for assessing significance and integrity of historic properties. As with any resource that is evaluated for listing in the NRHP, the TCP must be a tangible district, site, building, structure, or object (NPS 1998:11).

These terms are not meant to limit or exclude places from evaluation as a TCP; for instance, a bare grassy expanse at Mt. Tonaachaw on Weno, an island that is part of the Federated States of Micronesia, has been evaluated as a component of a TCP (NPS 1998:20) because it is associated with at least two different spirits who reside on or are represented by the mountain. This consideration requires merely that the TCP be a physical place or tangible object, in the broadest sense, rather than the intangible beliefs or values alone.

INTEGRITY OF TCPS

The TCP must have integrity, like any property eligible for listing in the NRHP. For traditional cultural resources, this means that they must have "integrity of relationship" and "integrity of condition" (NPS 1998:11–12). Integrity of relationship means simply that the specific place is integral and necessary to a traditional cultural group's beliefs or specific practices (NPS 1998:11). National Register Bulletin 38 gives the example of two different cultures, one that believes that baptism at a specific river is necessary to accept individuals as members, and another that simply requires baptism in any body of water. For the first example, the river is integrated into beliefs and practices of a traditional culture and thus has integrity of relationship.

Integrity of condition requires simply that the TCP has not been altered in such a way that it no longer can serve its function for the traditional cultural group. For example, a pilgrimage route to a sacred site would no longer have integrity of condition if modern construction had physically interrupted the route and thus made it unusable. This

requirement does not mean that the TCP must be completely intact without any changes to the setting or features of the resource; rather, the test is whether the resource can still function for traditional cultural purposes or whether the presence of new elements disrupts the function. National Register Bulletin 38 offers an example of a resource that has integrity despite changes to the setting. One reach of the Klamath River in northern California is within the ancestral and present territory of the Karuk people, and is the place where they carry out world renewal ceremonies and other rituals despite the presence of a modern highway, a U.S. Forest Service ranger station, and modern residences (NPS 1998:12).

If the TCP has integrity of relationship and integrity of condition, evaluation progresses to the second step of evaluating the resource for eligibility for listing in the NRHP, as described above.

STATE

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

CEQA requires public agencies to consider the effects of their actions on historical resources, unique archaeological resources, and TCRs. Under Public Resources Code (PRC) Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Under PRC Section 21084.2, a "project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment." PRC Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources.

TRIBAL CULTURAL RESOURCES

CEQA requires lead agencies to consider whether projects will affect TCRs. TCRs may or may not manifest as archaeological sites. In some cases, TCRs are viewsheds, plant gathering areas, or other sacred spaces that are not readily identifiable to non-tribal members. In many cases, TCRs also include an archaeological component, such as artifacts, features, and sites (with or without human remains). PRC Section 21074 states the following:

(a) "TCRs" are either of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in

subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(b) A cultural landscape that meets the criteria of subdivision (a) is a TCR 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 TCR if it conforms with the criteria of subdivision (a).

Assembly Bill (AB) 52

AB 52 (effective July 1, 2015) added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 to CEQA, relating to consultation with California Native American tribes, consideration of TCRs, and confidentiality. AB 52 provides procedural and substantive requirements for lead agency consultation with California Native American tribes and consideration of effects on TCRs, as well as examples of mitigation measures to avoid or minimize impacts to TCRs. AB 52 establishes that if a project may cause a substantial adverse change in the significance of a TCR, that project may have a significant effect on the environment. Lead agencies must avoid damaging effects to TCRs, when feasible, and shall keep information submitted by tribes confidential.

AB 52 requires a lead agency to consult with California Native American tribes that are traditionally and culturally affiliated with the geographic area of the proposed project, if the tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area and the tribe requests consultation. PRC Section 21080.3.1(d) states that within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project location and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to requests consultation pursuant to this section.

Public Resources Code, Section 5097.98

PRC Section 5097.98 states that whenever the NAHC receives notification of Native American human remains from a county coroner, the NAHC shall immediately notify the most likely descendant (MLD). The MLD may, with permission from the owner of the land in which the human remains were found, inspect the site and recommend to the owner or the responsible party conducting the excavation work a means for treating and/or disposing of the human remains and any associated grave goods. The MLD is required to complete their site inspection and make their recommendation within 48 hours of their notification from the NAHC.

California Health and Safety Code, Section 7052 and 7050.5

Section 7052 of the California Health and Safety Code states that the disturbance, mutilation, or removal of interred human remains is a felony if the remains are within a dedicated cemetery and a misdemeanor if interred outside of a dedicated cemetery. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner examines the find and determines whether the remains are subject to various laws, including recognizing whether the remains are or may be those of a Native American. If determined to be Native American, the coroner must contact the NAHC.

California Native American Graves Protection and Repatriation Act, Health and Safety Code Section 8010 through 8030

In the California Health and Safety Code, Division 7, Part 2, Chapter 5 broad provisions are made for the protection of Native American cultural resources. The Act sets the state policy to ensure that all California Native American human remains and cultural items are treated with due respect and dignity. The Act also provides the mechanism for disclosure and return of human remains and cultural items held by publicly funded agencies and museums in California. Likewise, the Act outlines the mechanism with which California Native American tribes not recognized by the federal government may file claims to human remains and cultural items held in agencies or museums.

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. This law requires that if human remains are discovered, construction or excavation activity must cease and the County Coroner must be notified. If the remains are of a Native American, the coroner must notify the NAHC. The NAHC then notifies those persons most likely to be descended from the Native American whose remains were discovered. The California Native American Historical, Cultural, and Sacred Sites Act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Local

Sacramento County General Plan

The *Sacramento County General Plan of 2005–2030* (Sacramento County 2011, as updated in 2017) Conservation Element, states under Section VI, Cultural Resources, the following goal and six objectives:

Promote the inventory, protection and interpretation of the cultural heritage of Sacramento County, including historical and archaeological settings, sites, buildings, features, artifacts and/or areas of ethnic historical, religious or socio-economic importance.

1. Comprehensive knowledge of archeological and historic site locations.

2. Attention and care during project review and construction to ensure that cultural resource sites, either previously known or discovered on the project site, are properly protected with sensitivity to Native American values.

3. Structures with architectural or historical importance preserved to maintain contributing design elements.

4. Known cultural resources protected from vandalism unauthorized excavation, or accidental destruction.

5. Properly stored and classified artifacts for ongoing study.

6. Public awareness and appreciation of both visible and intangible historic and cultural resources.

To implement the primary goal and the objectives, the Conservation Element contains the following policies relevant to the project and TCRs:

CO-150. Utilize local, state and national resources, such as the NCIC, to assist in determining the need for a cultural resources survey during project review.

CO-151. Projects involving an adoption or amendment of a General Plan or Specific Plan or the designation of open space shall be noticed to all appropriate Native American tribes in order to aid in the protection of traditional tribal cultural places.

CO-152. Consultations with Native American tribes shall be handled with confidentiality and respect regarding sensitive cultural resources on traditional tribal lands.

CO-153. Refer projects with identified archeological and cultural resources to the Cultural Resources Committee to determine significance of resource and recommend appropriate means of protection and mitigation. The Committee shall coordinate with the NAHC in developing recommendations.

CO-154. Protection of significant prehistoric, ethnohistoric and historic sites within open space easements to ensure that these resources are preserved in situ for perpetuity.

CO-155. Native American burial sites encountered during preapproved survey or during construction shall, whenever possible, remain in situ. Excavation and reburial shall occur when in situ preservation is not possible or when the archeological significance of the site merits excavation and recording procedure. On-site reinterment shall have priority. The project developer shall provide the burden of proof that off-site reinterment is the only feasible alternative. Reinterment shall be the responsibility of local tribal representatives.

CO-157. Monitor projects during construction to ensure crews follow proper reporting, safeguards, and procedures.

CO-159. Request a Native American Statement as part of the environmental review process on development projects with identified cultural resources.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

Based on Appendix G of the CEQA Guidelines, a project may have a significant impact on TCRs if it would:

- Cause a substantial adverse change in the significance of a TCR, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    - Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC section 5020.1(k), or
    - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

IMPACT TCR-1: CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A TRIBAL CULTURAL RESOURCE

Conducting consultation early in the CEQA process allows tribal governments, public lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to TCRs, and reduce the potential for delay and conflict in the environmental review process. The intent of the consultations is to provide an opportunity for interested Native American contacts to work together with the County during the project planning process to identify and protect TCRs.

The California NAHC Sacred Lands File records search response on December 3, 2020 indicated that no Native American resources on file at the NAHC fall within the APE.

Pursuant to the AB 52 consultation requirement, formal AB 52 notification letters were sent on September 1, 2021 to Native American tribal contacts who previously requested to be notified of Sacramento County projects within their traditionally and culturally affiliated area. The AB 52 notification package included a brief cover letter, complete project description, and cultural report.

Responses were received from the UAIC and from the Wilton Rancheria. UAIC staff noted that Native American monitoring during initial ground disturbance should be sufficient to reduce potential impacts to TCRs. Wilton Rancheria responded that with the implementation of tribal monitoring, they did not have further questions or concerns.

Based on the results of the pedestrian surveys, landforms, soil development, and surface visibility observed during surveys, there is moderate potential for the presence of previously undiscovered deposits, particularly in the area between the Cosumnes River and the levee, since several sensitive precontact sites were identified within a 0.5-mile radius of the project site within the APE (Dudek 2021). Poor visibility and soil formation processes in the project area suggest that buried deposits or small surface sites could also be present elsewhere in the project area, as well. Buried archaeological remains may be buried and exposed during project construction and decommissioning activities. Buried archaeological remains may be determined eligible for listing in the California Register of Historical Resources as TCRs, as would Native American human remains.

As described in Chapter 8, Cultural Resources, the implementation of Mitigation Measures CR-1 and CR-2 would generally reduce the potential impacts to any unknown archaeological sites or buried human remains that could be determined to be TCRs. While Mitigation Measures CR-1 and CR-2 would reduce the potential for adverse impacts to any archaeological resources during construction and decommissioning, the implementation of Mitigation Measures TCR-1a through TCR-1c would ensure the potential significant impacts specific to TCRs will be addressed.

The APE has moderate sensitivity for TCRs and may potentially contain buried TCRs that may be unearthed during ground disturbing activities during construction and decommissioning. Disturbance of a TCR would result in a **potentially significant impact.**

Mitigation Measures

TCR-1a through TCR-1c are recommended to address this potentially significant impact.

TCR-1a. Inadvertent/Unanticipated TCR Discoveries.

If any suspected TCRs are discovered during ground disturbing project-related activities, all work shall cease within 100 feet of the find. A Tribal Representative from culturally affiliated tribes shall be immediately notified and shall determine if the find is a TCR (PRC Section 21074). The Tribal Representative will make recommendations regarding the treatment of the discovery. Preservation in place is the preferred alternative under CEQA and UAIC protocols, and every effort must be made to preserve the resources in place, including through project redesign.

Work at the discovery location cannot resume until all necessary investigation and evaluation of the discovery under the requirements of the CEQA, including AB 52, has been satisfied.

The contractor shall implement any measures deemed by the CEQA lead agency to be necessary and feasible to preserve in place, avoid, or minimize impacts to the resource, including, but not limited to, facilitating the appropriate tribal treatment of the find, as necessary.

TCR-1b. Native American TCR Monitoring.

To minimize the potential for destruction of or damage to existing or previously undiscovered TCRs and to identify any such resources at the earliest possible time during project-related earthmoving activities, the project applicant and its construction contractor(s) will implement the following measures:

1. Native American Monitors from UAIC and Wilton Rancheria, paid by the project applicant, will be invited to monitor the vegetation grubbing, stripping, grading, or other ground-disturbing activities in the project area to determine the presence or absence of any TCRs. Native American Representatives from culturally affiliated tribes act as a representative of their Tribal government and shall be consulted before any cultural studies or ground-disturbing activities begin.

2. Native American Representatives and Native American Monitors have the authority to identify sites or objects of significance to Native Americans and to request that work be stopped, diverted, or slowed if such sites or objects are identified within the direct impact area; however, only a Native American Representative can recommend appropriate treatment of such sites or objects.

TCR-1c. Notification and Inspection of Ground Disturbance.

A minimum of seven days prior to beginning earthwork, clearing and grubbing, or other soil disturbing activities, the project applicant shall notify lead agency of the proposed earthwork start-date. The applicant shall contact the UAIC and Wilton Rancheria with the proposed earthwork start-date and UAIC and Wilton Rancheria Tribal Representatives or Tribal Monitors shall be invited to inspect the project site, including any soil piles, trenches, or other disturbed areas, within the first five days of groundbreaking activity, or as appropriate for the type and size of project. During this inspection, UAIC and Wilton Rancheria Tribal Representatives or Tribal Monitors may provide an on-site meeting for construction personnel information on TCRs and workers awareness brochure.

If any TCRs are encountered during this initial inspection, or during any subsequent construction activities, work shall be suspended within 100 feet of the find and the measures included in Mitigation Measure TCR-1a, Inadvertent/Unanticipated Discoveries, shall be implemented. Preservation in place is the preferred alternative under CEQA and UAIC protocols, and every effort must be made to preserve the resources in place, including through project redesign.

Significance after Mitigation

Implementation of recommended Mitigation Measures TCR-1a through TCR-1c would provide Native American tribes notification of pending ground disturbing activities and opportunity to monitor such activity with the authority to stop work if warranted. In addition,

the recommended mitigation measures would address any inadvertent discovery of TCRs, including cessation of construction activities proximate to the discovery and notification of the appropriate Tribal Representative(s). As a result, with implementation of these recommended mitigation measures, the impact on TCRs would be **less than significant with mitigation**.

13 WILDFIRE

INTRODUCTION

This chapter describes wildfire conditions and wildfire behavior, identifies the California Department of Forestry and Fire Protection (CAL FIRE) fire hazard severity zones for the project site and vicinity, and describes first response to wildfires in the project area. Impacts are evaluated relative to the potential for the proposed project to exacerbate wildfire risks or expose people or structures to significant risks. In addition, this analysis identifies design features and compliance with existing safety procedures, standards, and regulations related to managing fire risk that would be part of the project.

ENVIRONMENTAL SETTING

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION

Lands in the vicinity of the project site, east of Dillard Road, are within Battalion 4 of CAL FIRE's Amador-El Dorado Unit (CAL FIRE 2021). The CAL FIRE Amador-El Dorado Unit includes Amador, El Dorado, Alpine, and portions of Sacramento and San Joaquin counties. The total acreage in the Unit is 2,667,841, with approximately 910,589 acres served by CAL FIRE.

Battalion 4 of the Amador-El Dorado Unit consists of 650,424 acres and encompasses portions of Amador, El Dorado, Sacramento, and San Joaquin counties. There are two CAL FIRE stations within the Battalion. Sutter Hill Station, located at 11600 State Route 49 (CA-49) in Sutter Creek, staffs one Type 3 engine[1] year-round and a second Type 3 engine and bulldozer during fire season. Sutter Hill station is also the location of an automotive shop, the Unit's Service Center, and the Unit's training classroom. Pine Lodge Station, located at 150 Shenandoah Road in River Pines, staffs one Type 3 engine during fire season. There are no CAL FIRE stations in Sacramento or San Joaquin counties (CAL FIRE 2021).

2020 FIRE SEASON IGNITION STATISTICS

The Amador-El Dorado Unit's Strategic Fire Plan provided a comprehensive summary of fire ignition statistics. In 2020, the Amador-El Dorado Unit experienced 306 wildland fire ignitions within its protection area resulting in approximately 6,820 acres burned. This was an increase of 68 ignitions from 2019 (238 fires), and considerably more than the 10-year annual average of 215 fires. Twenty-four wildland fire ignitions occurred in Sacramento County in 2020.

Most wildfires in the Amador-El Dorado Unit protection area have resulted from debris burning (33 percent). Other common fire causes within the Amador-El Dorado Unit protection area include vehicles (10 percent), equipment (10 percent), and miscellaneous ignitions (9 percent) (CAL FIRE 2021). Fourteen percent of fires had undetermined causes and the remainder were

[1] A Type 3 fire engine is typical equipment in a mountainous or rural community. These are usually four-wheel drive apparatus designed for rapid deployment, pick up, and relocation during wildfires. Technically, a Type 3 fire engine includes a pump operating at 120 gallons per minute (gpm), a large 500 gal/tank, 1,000 ft. 1 1/2″ hose, 800 ft. 1″, and minimum of four firefighters.

caused by electrical fires (8 percent), arson (6 percent), campfires (3 percent), smoking (3 percent), playing with fire (2 percent), and lightning (1 percent). Four of the five largest fires in 2020 in the Amador-El Dorado Unit occurred in Sacramento County (CAL FIRE 2021):

- Grant Fire, the largest fire in 2020, burned 5,042 acres. The cause of the fire was welding on fencing.
- Clay Fire burned 741 acres. The cause of the fire was smoking.
- Meiss Fire burned 512 acres. The cause of the fire was miscellaneous (shooting exploding shotgun shells).[2]
- Ione Fire burned 51 acres. The cause of the fire was overhead electrical powerlines.

SACRAMENTO METROPOLITAN FIRE DISTRICT

The Sacramento Metropolitan Fire District (Metro Fire) provides fire suppression and emergency medical services along with various other public safety and hazard mitigation community services to 720,000 residents in an approximately 359 square-mile area that includes two cities, Citrus Heights and Rancho Cordova, most of the unincorporated area of Sacramento County, including the project site, and a portion of Placer County. Metro Fire provides all-hazard fire suppression and emergency medical services from 41 fire stations located across its service area with the intent to respond to any emergency within its goal of a 4-minute travel time (Metro Fire 2021). In 2021, Metro Fire average response time was 4 minutes and 12 seconds to reach structure fires and 6 minutes and 9 seconds to provide medical aid (Metro Fire 2021).

The closest station to the project site is Station 58 located at 7250 Sloughhouse Road in Elk Grove, approximately 4.5 miles north of the project site. Station 58 includes one Type 3 engine, one 3,000-gallon water tender, and two dozers (Metro Fire 2022).[3]

WILDFIRE CLASSIFICATION AND BEHAVIOR

Fires are classified by where in the fuel strata they burn: surface fires, understory fires, and crown fires (California Forest Stewardship Program 2015). Surface fires are the most common. Depending on the fuels, weather, and topography, these fires can be low to high intensity. Understory fires have flame lengths of up to 10 feet. They consume surface fuels, small trees, brush, and lower branches of overstory trees. Crown fires reach into the crowns of trees with flame lengths of more than 10 feet.

Fire season is the period when fires are expected to occur, based on knowledge of long-term climate patterns. Wildland fire behavior is based on three primary factors: topography, weather, and fuels. The following discussion briefly describes how each of these factors influences wildfire behavior within and in the vicinity of the project site.

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[2] The Meiss Fire started on August 13, 2020 in the vicinity of Dillard Road and Meiss Road on the Van Vleck Ranch and was spotted by CAL FIRE volunteers at the Mount Zion lookout in Battalion 3. The Meiss Fire did not spread into the proposed project site and was fully contained on August 14, 2020.

[3] Metro Fire's Dozer Operations and all dozer equipment are currently run out of fire station 58. When Metro Fire declares the start of wildland season the Dozer is staffed with one qualified Operator 24 hours a day, 7 days a week until the end of wildland season (Metro Fire 2022).

Topography

Topographic features such as slope and aspect influence a fire's intensity, direction, and rate of spread. Fires burning in flat or gently sloping areas tend to burn more slowly and spread in wider ellipses than fires on steep slopes. Streams, rivers, and canyons can channel local diurnal and general winds, which can accelerate a fire's speed and affect its direction, especially during foehn (warm, dry, and unusually strong) wind events (California Forest Stewardship Program 2015).

The project site is gently rolling; elevations in the proposed development area range from approximately 103 to 146 feet above mean sea level. Most of the surface drainage in the proposed development area flows west and south off the project site into an approximately 16-acre off-site pond. As described in detail in the *Aquatic Resources Delineation Report for the Sloughhouse Solar Project* (Dudek 2022), there are a variety of surface waters features at the project site, including small ponds, intermittent drainages, freshwater emergent wetland, seasonal wetlands, vernal pools, ephemeral drainages, seasonal wetland swales, and upland swales. The distance to the Cosumnes River ranges from approximately 150 feet in the northwest corner of the project site, to more than 0.5 mile in the southwest corner.

Weather

Weather conditions influence the potential for fire ignition, rates of spread, intensity, and the direction(s) toward which a fire burns. Temperature, relative humidity, and wind are the variables used to predict fire behavior.

The project region has a mild Mediterranean climate, with hot dry summers and cool, wet winters. Most of the precipitation falls during winter months, from November to April. About 75 percent of the annual precipitation occurs then, but measurable rain falls only on an average of nine days per month during that period (National Oceanic and Atmospheric Administration [NOAA] 2021). On average, the months with the highest rainfall are December and January, and July has the least precipitation (NOAA 2021).

The project site has average annual temperatures that range from approximately 53°F to 91°F, and the average annual precipitation is 19.14 inches (California Department of Water Resources 2021, NOAA 2021). According to data from NOAA, the total precipitation recorded from January 1, 2021 through December 31, 2021 at the Sacramento WB Station was 18.90 inches (NOAA 2021).

Wind plays a role in the flammability of fuels by removing moisture through evaporation, preheating fuels in a fire's path, and increasing spotting distances (the distance at which a flying ember might ignite a spot fire). The prevailing wind in Sacramento County is southerly except for November, when it is northerly. Topographic effects, the north-south alignment of the valley, the coast range, and the Sierra Nevada strongly influence the wind flow in the valley (NOAA 2021). In 2021, the average windspeed in Sacramento County was 2.7 miles per hour (NOAA 2021).

Fuels

Vegetation usually provides most of the fuel that feeds wildfire. The volume, character, distribution, and arrangement of vegetation all greatly influence fire behavior (California Forest Stewardship Program 2015). The site historically has been used for year-round cattle grazing,

along with an area that was cultivated for alfalfa hay (for cattle feed). California annual grassland is the dominant vegetation community present within the project site with Valley oak woodland along the Cosumnes River. The rate of spread in ungrazed grass is moderate to high, with low to moderate fireline intensity (flame length). Grazed grass produces substantially lower flame lengths and spreads slower by one-quarter to one-half the rate (Wildland Res Mgt et al, 2014).

See Chapter 6, "Biological Resources", for further discussion of habitat and vegetation types in the project site.

Fire Hazard Severity Zones

Fire hazard severity zones are measured qualitatively, based on vegetation, topography, weather, crown fire potential (a fire's tendency to burn upward into trees and tall brush), and ember production and movement within the area in question.

Fire prevention areas considered to be under state jurisdiction are referred to state responsibility areas (SRAs), and CAL FIRE is responsible for vegetation fires within SRA lands.[4] In general, SRA lands contain trees producing, or capable of producing, forest products; timber, brush, undergrowth, and grass, whether of commercial value or not, that provide watershed protection for irrigation or for domestic or industrial use; or lands in areas that are principally used, or are useful for, range or forage purposes.

Public Resources Code (PRC) Sections 4201–4204 and Government Code Sections 51175–51189 require identification of fire hazard severity zones within the State of California. In SRAs, CAL FIRE is required to delineate three wildfire hazard ranges: moderate, high, and very high. As shown in Plate WF-1, the project site is not within a SRA; however, the project site boundary abuts lands east of Dillard Road that are within a SRA (CAL FIRE 2007). The lands east of Dillard Road are designated by CAL FIRE as Moderate Fire Hazard Severity Zones (Plate WF-2).[5] The SRA adjacent to the project site is within Battalion 4 of CAL FIRE's Amador-El Dorado Unit (CAL FIRE 2021).

CAL FIRE identifies only very high fire hazard severity zones in local responsibility areas (LRAs), which are areas under the jurisdiction of local entities (e.g., cities and counties). The project site is within a LRA, and Metro Fire provides fire protection services to the project site. There are no very high fire hazard severity zones within or in the vicinity of the project site (Plate WF-1 and Plate WF-2) (CAL FIRE 2008).

[4] California Public Resources Code (PRC) Sections 4125–4127 define a State Responsibility Area as lands in which the financial responsibility for preventing and suppressing wildland fire resides with the State of California.

[5] CAL FIRE's Online Fire Hazard Severity Zone viewer was accessed on March 9, 2022, to confirm the hazard severity zone rating for the project site (http://egis.fire.ca.gov/FHSZ/).

Plate WF-1: Fire Responsibility Areas

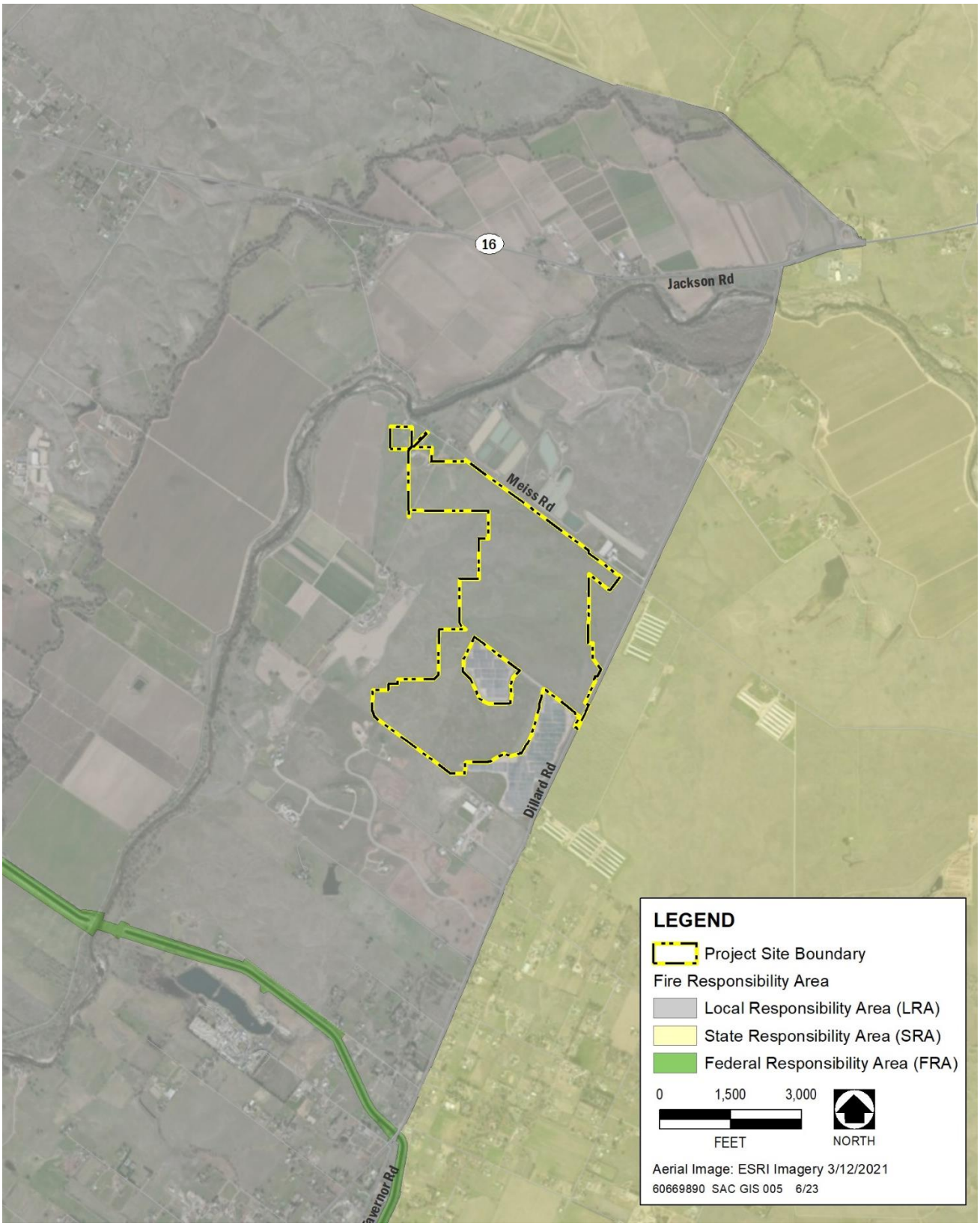
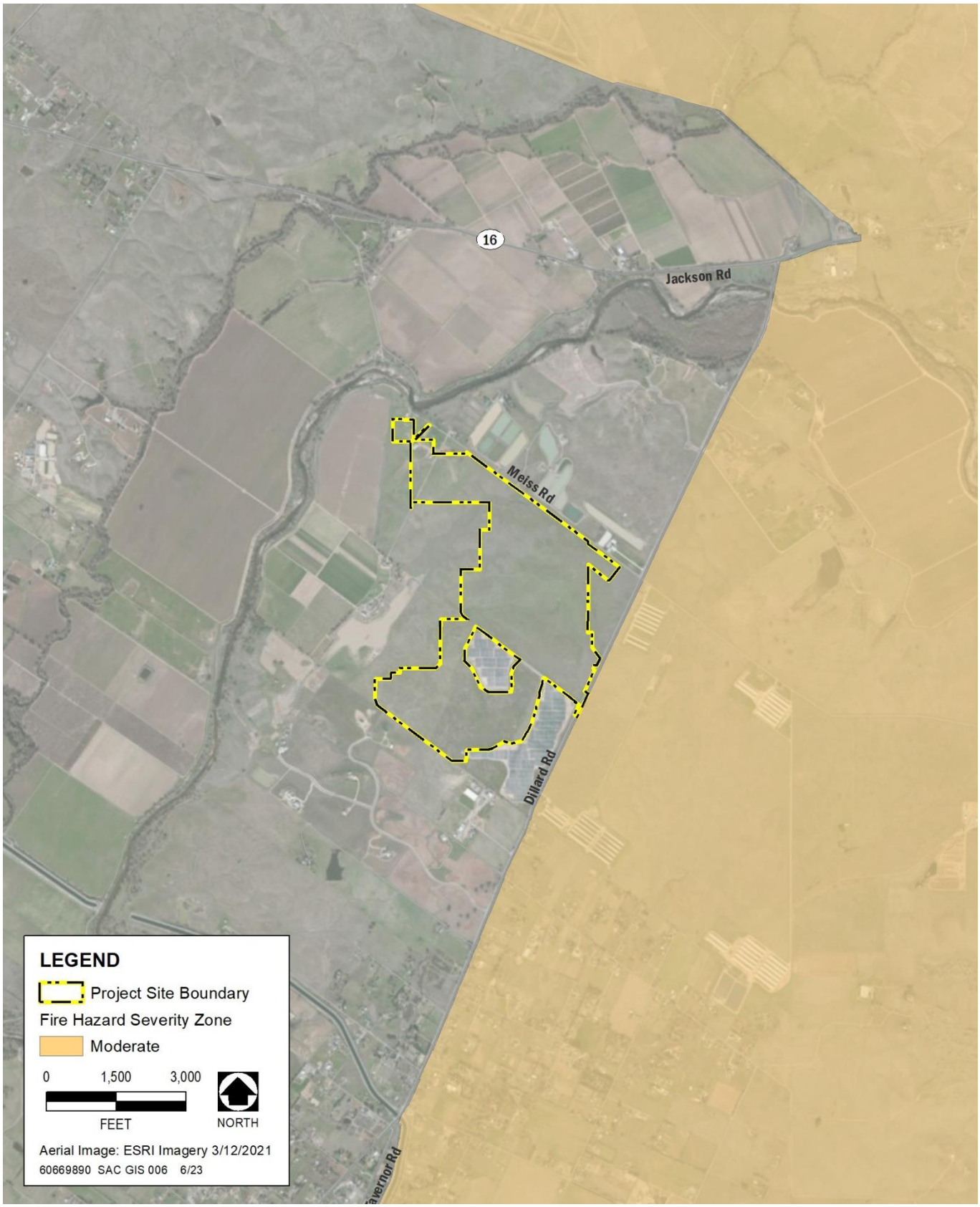


Plate WF-2: Fire Hazard Severity Zones



REGULATORY SETTING

FEDERAL

NATIONAL FIRE PROTECTION ASSOCIATION CODES, STANDARDS, PRACTICES, AND GUIDES

National Fire Protection Association (NFPA) codes, standards, recommended practices, and guides are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together professionals representing varied viewpoints and interests to achieve consensus on fire and other safety issues. NFPA standards are recommended guidelines and nationally accepted good practices in fire protection but are not law or "codes" unless adopted as such or referenced as such by the California Fire Code or the local fire agency.

NFPA 70, NATIONAL ELECTRICAL CODE

NFPA 70, National Electrical Code (NEC), sets the foundation for electrical safety in residential, commercial, and industrial occupancies. It is consistently reviewed and updated, with input from active professionals in the field, to stay ahead of the constant changes in technology and safety. Article 480 (Storage Batteries), Article 690 (Solar Photovoltaic Systems), and Article 691 (Large-Scale Solar Photovoltaic Electrical Supply Stations) of the 2020 NEC edition specifically address installation and operation of photovoltaic (PV) systems and associated facilities (NFPA 2020).

NFPA 850, FIRE PROTECTION FOR ELECTRIC GENERATING PLANTS AND HIGH VOLTAGE DIRECT CURRENT CONVERTER STATIONS

NFPA 850, Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations, was prepared for the guidance of those charged with the design, construction, operation, and protection of electric generating plants and high voltage direct current converter stations. This document provides fire hazard control recommendations for the safety of construction and operating personnel, the physical integrity of plant components, fire protection systems and equipment, and the continuity of plant operations.

NFPA 855, STANDARD FOR THE INSTALLATION OF STATIONARY ENERGY STORAGE SYSTEMS

NFPA 855, Standard for the Installation of Stationary Energy Storage Systems, provides minimum requirements for mitigating hazards associated with energy storage systems. This document provides recommendations for exhaust ventilation; smoke and fire detection; explosion control; fire protection systems and equipment; and installing, operating, maintaining, and decommissioning energy storage systems.

STATE

CALIFORNIA FIRE CODE

The California Fire Code (Title 24, Chapter 9 of the California Code of Regulations) contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire safety requirements for new and existing buildings and the surrounding

premises. The following sections in Chapter 12 of the 2019 California Fire Code with July 2021 Supplements contains specialized technical regulations related to energy systems.

SECTION 1204

Section 1204 (Solar Photovoltaic Power Systems) of the California Fire Code requires a clear, brush-free area of 10 feet around all ground-mounted PV arrays and a building(s) containing a rapid shutdown system with permanent labels describing the rapid shutdown process.

SECTION 1205

Section 1205 (Stationary Fuel Cell Power Systems) of the California Fire Code identifies requirements for installation and operation of stationary fuel cell power systems, including ventilation and exhaust, gas detection systems, fuel supply, and fire suppression equipment.

SECTION 1206

Section 1206 (Electrical Energy Storage Systems [ESS]) of the California Fire Code outlines construction and operation permit requirements for stationary and mobile energy storage systems, as well as installation, replacement, and maintenance requirements.

CALIFORNIA PUBLIC RESOURCES CODE

SECTION 4291

PRC Section 4291 applies to a person who owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area; lands covered by forest, brush, or grass; or land that is covered with flammable material. PRC Section 4291 requires maintaining defensible space of 100 feet from each side of the structure, but not beyond the property line. The amount of fuel modification necessary must account for the flammability of the structure as affected by building material, building standards, location, and type of vegetation.

SECTION 4292

PRC Section 4292 sets forth the basic requirements for clearances around poles and towers. This section requires that flammable fuels be cleared for a minimum 10-foot radius from the outer circumference of certain poles and towers (nonexempt or subject poles or towers). The minimum clearance requirements are based on the type of hardware affixed to the line at the pole or tower. The distances for clearance requirements must be measured horizontally, not along the surface of sloping ground.

SECTION 4293

PRC Section 4293 sets forth the basic requirements for clearances around electrical conductors. This section requires that all vegetation be cleared for a specific radial distance from conductors, based on the voltage carried by the conductors: 4 feet for voltages between 2,400 and 72,000 volts; 6 feet between 72,000 and 110,000 volts; and 10 feet for voltages greater than 110,000 volts. In addition, this section calls for removal or trimming of trees that are dead, decadent, rotten, decayed, or diseased, and could fall into the line or cause other surrounding trees to fall into the line.

SECTION 4427

PRC Section 4427 limits the use of any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, tarpots, or grinding devices from which a spark, fire, or flame may

originate, when the equipment is located on or near land covered by forest, brush, or grass. Before such equipment may be used, all flammable material, including snags, must be cleared away from the area around such operation for a distance of 10 feet. A serviceable round point shovel with an overall length of not less than 46 inches and a backpack pump water-type fire extinguisher, fully equipped and ready for use, must be maintained in the immediate area during the operation.

SECTION 4428

PRC Section 4428 limits industrial operations on or near any land covered by forest, brush, or grass between April 1 and December 1 of any year, or other times when ground litter and vegetation will sustain combustion permitting the spread of fire. Such operations must provide and maintain, for firefighting purposes only, suitable and serviceable tools in the following amounts, manner, and locations:

- A sealed box of tools must be located in the operating area, at a point accessible in the event of fire. The fire toolbox must contain a backpack pump-type fire extinguisher filled with water, two axes, two McLeod fire tools, and enough shovels for each employee at the operation to be equipped to fight fire.
- Each passenger vehicle used must be equipped with a shovel and an ax, and any other vehicle used must be equipped with a shovel. Each tractor used must also be equipped with a shovel.

SECTION 4431

PRC Section 4431 requires users of gasoline-fueled internal combustion–powered equipment operating within 25 feet of flammable material on or near land covered by forest, brush, or grass to have a tool for firefighting purposes at the immediate location of use. This requirement is limited to periods when burn permits are necessary. Under Section 4431, the Director of Forestry and Fire Protection specifies the type and size of fire extinguisher necessary to provide at least a minimum assurance of controlling fire caused by use of portable power tools during various climatic and fuel conditions.

SECTION 4442

PRC Section 4442 prohibits the use of internal combustion engines running on hydrocarbon fuels on any land covered by forest, brush, or grass unless the engine is equipped with a spark arrestor and is constructed, equipped, and maintained in good working order when traveling on any such land.[6]

LOCAL

SACRAMENTO COUNTY OPERATIONAL AREA EVACUATION ANNEX

The Sacramento County *Operational Area Evacuation Annex* (Sacramento County Office of Emergency Services 2018) provides evacuation strategies that will be implemented in an affected area, including public alerts and warnings, transportation, and evacuation triggers. The

[6] A spark arrester is a device constructed of nonflammable materials specifically for the purpose of removing and retaining carbon and other flammable particles larger than 0.0232 inch from the exhaust flow of an internal combustion engine that uses hydrocarbon fuels or which is qualified and rated by the U.S. Forest Service.

Annex outlines local government (Cities and Special Districts), the Sacramento Operational Area, and State responsibilities for management of evacuation during an emergency situation. Organizations, operational concepts, responsibilities, and a documented process to accomplish an evacuation are defined within the Annex.

Sacramento County General Plan

The *Sacramento County General Plan of 2005–2030* (Sacramento County 2017) includes the following policies related to wildfire that apply to the proposed project.

Safety Element

SA-23. The County shall require that all new development meets the local fire district standards for adequate water supply and pressure, fire hydrants, and access to structures by firefighting equipment and personnel.

SA-24. The County shall require, unless it is deemed infeasible to do so, the use of both natural and mechanical vegetation control in lieu of burning or the use of chemicals in areas where hazards from natural cover must be eliminated, such as levees and vacant lots.

SA-28. The County shall encourage and require, to the maximum extent feasible, automatic fire sprinkler systems for all new commercial and industrial development to reduce the dependence on fire department equipment and personnel.

Impacts and Analysis

Significance Criteria

Based on Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact related to wildfire if it would be located in or near state responsibility areas or lands classified as very high fire hazard severity zones and would:

- substantially impair an adopted emergency response plan or emergency evacuation plan;
- due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
- 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
- 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.

Issues Not Discussed Further

Downstream Runoff, Post-Fire Slope Instability, or Drainage Changes — With project implementation, grading and cuts-and-fills to a depth of approximately 15 feet in steeper areas of the project site would be required, and would generate approximately 78,000 cubic yards of soil material that would be transported off the project site for disposal. Where necessary, grading would occur to ensure that all portions of the project site continue to drain towards the south and west into the existing surface water features, which would continue to convey the project's

stormwater runoff into the approximately 16-acre off-site pond (Baker-Williams Engineering Group 2021). The proposed project facilities would include up to 17 acres of new impervious surfaces (which represents approximately 4.5 percent of the total proposed development area). The project applicant is required to comply with the County's Land Grading and Erosion Control Ordinance (Sacramento County Municipal Code Chapter 16.44) and Floodplain Management Ordinance Chapter 16.02, obtain a permit from the County Floodplain Administrator, prepare a Stormwater Pollution Prevention Plan, and implement site-specific Best Management Practices that manage stormwater runoff and erosion. Furthermore, a preliminary drainage study has been completed to ensure the proposed project would not increase downstream flooding. (See Chapter 9, Hydrology and Water Quality, for a detailed discussion of stormwater runoff and drainage changes). Therefore, the proposed project would not create conditions that cause downstream runoff, post-fire slope instability, or drainage changes that would expose people or structures to significant risks, and this issue is not evaluated further in this section of the EIR. There is **no impact**.

IMPACT WF-1: SUBSTANTIALLY IMPAIR AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN

In the event of an emergency, Dillard Road and State Route 16 would be used as evacuation routes (Sacramento County Office of Emergency Services 2018).

CONSTRUCTION

All project-related construction materials, equipment, and personnel would be staged on the project site. All emergency ingress and egress routes on the surrounding roadways would remain open and unblocked during both construction and operation. As described in Chapter 11, Traffic and Circulation, the implementation of a traffic control plan during construction as part of Mitigation Measure TC-1 would be required to ensure safe and efficient movement of traffic in the affected area. The traffic control plan would include signage, traffic cones, and flaggers to ensure safe and efficient movement of traffic through the affected area. Additionally, the traffic control plan would notify emergency responders regarding the planned construction activities. Without a traffic control plan, the proposed project could result in a **potentially significant** impact by impairing implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan. To address this potentially significant impact, the project applicant would be required to prepare and implement a traffic control plan in accordance with Mitigation Measure TC-1.

MITIGATION MEASURES

Implement Mitigation Measure TC-1.

SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measure TC-1 would limit the potential for traffic hazards to occur during construction by providing sufficient warning to motorists and emergency vehicles passing by the project site by adding features such as flaggers and traffic cones that would minimize conflicts with construction vehicles and equipment. The traffic control plan would require the project applicant to notify emergency responders regarding the planned construction activities. As a result, the proposed project would not physically interfere with an adopted emergency plan or emergency evacuation plan, and the impact would be **less than significant with mitigation**.

Operation

Project operations would involve limited traffic volumes as the project would be operated remotely. Periodic maintenance and panel washing activities would not generate substantial traffic. Therefore, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and the impact would be **less than significant**.

Impact WF-2: Exacerbate Wildfire Risk

The project site is situated in a rural area consisting primarily of farmland, with a few rural residences on large lots. For the proposed project, approximately 380 acres of existing livestock (cattle) grazing land would be converted to urban, industrial development in the form of new solar generating facilities. Most of the project site would consist of pole-mounted solar panel arrays. In addition, an electrical substation, battery storage buildings, small one-story office building, internal roadways, chain link fencing and gates, and other ancillary facilities would be developed.

As stated above, Appendix G of the CEQA Guidelines determines wildfire impacts based on whether a proposed project would occur within or near a SRA or on lands classified as very high fire hazard severity zones. The proposed project would not be within a SRA or on lands classified as a very high fire hazard severity zone (Plate WF-1 and Plate WF-2). However, the project site boundary is adjacent to lands east of Dillard Road that are within a SRA, and these lands are designated by CAL FIRE as Moderate Fire Hazard Severity Zones.

Construction

During project construction, the primary fire hazards would be from vehicles and construction equipment. Construction vehicles use flammable fuels, such as diesel and gasoline, and would be operated in proximity to dry vegetation; their hot tailpipes or sparks from chains or other metal objects could ignite dry brush, especially during the warmer, dry months between June and October. Additionally, activities such as welding and grinding could generate sparks, which would increase the likelihood of ignition. Therefore, depending 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.

Construction of the project would be required to comply with all laws, plans, policies, and regulations related to fire safety and wildfire suppression identified above in the Regulatory Setting section, including the following requirements from the California PRC:

- PRC Section 4292, which sets forth the basic requirements for clearances around poles and towers. This section requires that flammable fuels be cleared for a minimum 10-foot radius from the outer circumference of certain poles and towers.
- PRC Section 4427, which identifies appropriate fire suppression equipment and stipulates removal of flammable materials to a distance of 10 feet from any equipment that could produce a spark, fire, or flame on days when burning permits are required;
- PRC Section 4428, which identifies additional firefighting equipment requirements during the period of highest fire danger (April 1–December 1);

- PRC Section 4431, which prohibits the use of portable tools powered by gasoline-fueled internal combustion engines within 25 feet of flammable materials when burning permits are required; and
- PRC Section 4442, which requires engines be equipped with a spark arrestor.

Strict adherence to applicable PRC requirements would ensure that wildfire risks are minimized.

Construction of the project would involve preparation, installation, and testing of electrical components such as cables, inverters, wiring, modules, and a transformer. Prior to wire setup, work areas would be cleared of vegetation to reduce the risk of ignition from any vehicles or equipment per PRC Section 4292. Small quantities of potentially flammable substances, such as oils, fuels, and greases, would be stored at the site during construction. These potentially flammable substances would be required to be used and stored in accordance with all applicable federal, state, and local laws, regulations, and policies (see Chapter 15 and the discussion of Hazards and Hazardous Materials for further detail).

Operations

The facility would be primarily operated remotely through a local solar operations and maintenance company, facilitated by the project Supervisory Control and Data Acquisition system. Operations at the site are expected to generate 4 to 10 trips per day for daily visual inspections and maintenance. In addition, the landscaping installed along the perimeter of the project site would be maintained periodically. These intermittent maintenance activities could increase the potential for ignition on-site due to the presence of vehicles and use of equipment.

Other potential causes of wildfire associated with operations and maintenance of the proposed project could include DC arc faults,[7] hot spot effects, electrical shorts, sparking, motor or other machinery fire, wiring and harnessing fire, overheated junction boxes, vandalism, fire in an inverter, short circuit and fire of components in or on a panel, potential for sun reflection from panels igniting vegetation, substation and switchgear fire, thermal runaway associated with battery energy storage facilities, and construction of other internal infrastructure such as aggregate base roadways.

The majority of the solar facility's equipment would consist of solar PV panels and their mounting systems, which would be assembled from noncombustible, nonflammable materials, such as steel or aluminum. The fire risk in PV systems is very low and most fires are a result of installation errors, faulty equipment, and aging facilities causing DC arc faults (TUV Rheinland Energie und Umwelt GmbH 2018, Wu et al., 2020). Panels would be washed and cleared of debris, as needed, to reduce the potential of hot spot effects.[8] Solar PV panels are specifically designed to reduce reflection, as any reflected light cannot be converted into electricity, and as a result the solar PV panels would not cause sun reflection that could ignite vegetation (Dudek 2020). The PV system would be operated and maintained consistent with Section 1204 (Solar Photovoltaic

[7] DC arc faults occur wherever there are joints in the DC cables, a breakdown of cable continuity, or a breakdown of insulation. This can occur on the solar modules, the DC connectors, the DC cabling, the joints in the DC isolators or inside the inverter.

[8] The hotspot effect occurs when a solar panel is shaded by trees or blocked by dirt and debris and the current cannot flow around weak cells. Eventually, the current will concentrate in a few cells, causing them to overheat and potentially melt or ignite.

Power Systems) of the California Fire Code and Article 690 (Solar Photovoltaic Systems) of the NEC.

Due to the proximate siting of the proposed substation and point of interconnection, limited gen-tie facilities would be required. Generally, gen-tie transmission structures are composed of nonflammable lattice steel structures, steel H-frames, or monopole steel structures. Wires would be buried at a minimum of 12 inches below grade, minimizing the potential for faulty wiring to ignite a fire.

Inverters, transformers, and electrical components of the substation and switchyard may pose a risk of fire. Assembly and installation of the electrical equipment would be required to meet existing electrical and safety standards of the California Fire Code. Certified electricians and utility journeymen would be part of the construction workforce to ensure that all electrical equipment is assembled properly. All electric inverters and the transformer would have a concrete mat foundation and would be tested prior to use to ensure safe operations and avoid fire risks. Ongoing maintenance would ensure all components of the project are in proper condition, thereby minimizing accidents and potential fires. The project would incorporate battery energy storage facilities, as well as energy storage housed within the inverters. Potential hazards associated with battery energy storage facilities are primarily associated with the possibility of thermal runaway (similar to overheating) occurring from a malfunctioning or damaged battery. Newer battery technologies have minimized the occurrence of thermal runaway through a system of protections including internal cell monitoring and partitioning; use of nonflammable chemicals; container design and features; ventilation, and air-conditioning systems; and inert gas fire suppression systems. Because energy storage technology is rapidly advancing, a single technology or provider has not been selected for the energy storage component of the project. The storage component would be centralized or located adjacent to the substation or switchgear, or alternatively, the energy storage component may be distributed throughout the plant adjacent to individual power conversion centers. The storage component would be housed in a single warehouse-type building or alternatively in smaller modular structures such located throughout the site. The battery storage structure(s) would be self-contained and supported on a concrete mat foundation (see Photo PD-3 in Chapter 2, “Project Description”). The energy storage system would be installed following all applicable design, safety, and fires standards for the installation of energy storage systems, including, but not limited to, Article 608 of the NEC, NFPA 855, and Section 1206 of the California Fire Code, all of which includes criteria for fire prevention and suppression associated with energy storage facilities installations. Implementation and compliance with these design and safety regulations would reduce potential fire risks.

Electrical components could pose a small risk of fire if they become damaged or are vandalized. The property would be fenced, security lighting installed, and high-voltage warning signs posted. The fence would be monitored periodically to detect any intrusion into the property. Access would be controlled through security gates at several entrances. Multiple gate-restricted access points would be used during operation.

Additionally, fire safety measures would be implemented during operations, including having portable fire-fighting equipment available on-site, as well as additional water storage for emergency use. Defensible space of 100 feet from each side of on-site structures per PRC Section 4291 would be maintained. Clearances around poles and electrical conductors would be consistent with PRC Section 4292 and PRC Section 4293, respectively. Reduction of vegetation would further reduce the availability of flammable fuels around the project site. These

safety measures would provide safe operating conditions and fire response protocols to minimize the risk of wildfire.

The potential for installation or maintenance of internal aggregate base roadways or similar infrastructure to result in temporary or ongoing impacts to the environment are addressed in the applicable resource chapters throughout this document. Where development of the proposed project would result in potentially significant or significant environmental impacts, mitigation measures are identified to reduce those impacts to less-than-significant levels. There are no additional potentially significant or significant impacts associated with the installation and maintenance of infrastructure beyond those comprehensively considered throughout the other chapters of this EIR.

VEGETATION MANAGEMENT

During project operations, the project site would be converted to dryland pasture supporting a combination of grassland species and non-invasive forbs. Grazing is proposed within the development area around the solar panels and the project would also require mechanical mowing and other forms of vegetation management on-site. Grazing would be governed by the project's *Agricultural Management Plan* (Dudek 2023). One primary goal of the Agricultural Management Plan is to reduce the height and density of vegetation to minimize the danger of grass fires (Dudek 2023). While actual grazing timing may vary from year to year depending on weather and forage conditions, it is assumed that short-season (60-day) grazing would likely start between March 1 and April 30 because rainfall diminishes substantially after April 30 and therefore the quality of available forage declines to the point where it cannot sustain livestock grazing (Dudek 2023). Grass would be maintained at a height of approximately 12 inches and optimally 4–8 inches. Grazing modifies the amount, height, and continuity of fuel through ingestion and trampling, and has been shown to reduce fuel load more effectively than mechanical methods (Nader 2019, University of California 2022). In addition, grazed grass produces substantially lower flame lengths and spreads slower by one-quarter to one-half the rate (Wildland Res Mgt et al, 2014).

DECOMMISSIONING

Similar to construction, the primary fire hazards during decommissioning would be from vehicles and construction equipment. During decommissioning, the project would be required to comply with all laws, plans, policies, and regulations related to fire safety and wildfire suppression identified in the discussion above under Regulatory Setting, including PRC Section 4427, PRC Section 4428, PRC Section 4431, and PRC Section 4442. Strict adherence to applicable PRCs requirements would ensure that wildfire risks are minimized.

At the end of the project's operational life, decommissioning would occur in accordance with Sacramento County's decommissioning requirements, as documented in the project's *Decommissioning and Site Restoration Plan* (Dudek 2021b). Most project components that are no longer needed would be removed from the site and recycled. At decommissioning, the energy storage components would be dismantled consistent with applicable federal and State regulations and recycled, and the prefabricated control house and electronic components of the substation equipment would be electrically disconnected and made safe for removal. The transformers, breakers, buswork, and metal dead-end structures would also be disassembled and removed. Decommissioning of the aboveground portion of the transmission line would consist of removal of the overhead conductors and removal of poles. All underground cables would be cut off and would remain in place at a depth of 12 inches below ground surface.

Impact Conclusion

The proposed project would not be within a SRA or on lands classified as a very high fire hazard severity zone and wildfire risks during construction, operation, and decommissioning would be offset by compliance with fire safety and wildfire suppression measures identified in the Regulatory Setting discussion above. Adherence to these safety measures, when considered together, would minimize the risk of increased frequency, intensity, or size of wildfires and decrease the risk of exposure of people or structures to wildfire. All of the project facilities would be installed, operated, and maintained following all applicable design, safety, and fires standards. Many of the project components, such as the solar PV panels and their mounting systems; gen-tie transmission structures; and structures housing inverters, transformers, and battery storage facilities, would not exacerbate fire risks due to the nonflammable nature of their foundations and constituent parts.

As described above in the "Environmental Setting", the project site is currently used for year-round cattle grazing. During operation, the project site would be converted to industrial development in the form of new solar generating facilities and these new facilities would be surrounded by dryland pasture housing a combination of grassland species and non-invasive forbs (Dudek 2023). The project site would be grazed in the springtime while the forage conditions are appropriate for grazing, approximately starting between March 1 and April 30, as governed by the project's *Agricultural Management Plan* (Dudek 2023). The Agricultural Management Plan has been developed to manage grassland on-site with provisions to minimize fire risk. The installation of the project components in the previously undisturbed agricultural field would introduce structures that could make grazing less efficient and could result in a **potentially significant** impact if vegetation is not properly maintained on-site in a way that could exacerbate wildfire risk.

Mitigation Measure

WF-1. Demonstrate Compliance with the California Fire Code, California Building Code, and Sacramento Metro Fire Department Requirements and Standards, and Manage Vegetation On-site.

Prior to the approval of project designs and issuance of grading permits, the applicant shall demonstrate compliance with California Fire Code requirements and Sacramento Metro Fire Department standards, including those related to the design of solar panels and associated electrical components; defensible space requirements (100 feet from each side of a structure, but not beyond the property line per PRC Section 4291); clearance around electrical equipment; keeping portable fire-fighting equipment on-site; and storing water for emergency use. The applicant shall further demonstrate that ignition-resistant building materials have been incorporated into project designs consistent with the California Building Code. The applicant shall keep grasses and weeds on the undeveloped portion of the project site to a height of six inches or less after the grazing season, and throughout the dry season months, between May and November, to manage grass height and fuel load on-site.

Significance after Mitigation

The implementation of Mitigation Measure WF-1 would reduce potentially significant impacts associated with the exacerbation of wildfire risks by requiring the applicant to incorporate California Fire Code requirements, California Building Code requirements, and Sacramento

Metro Fire Department standards into project designs and by requiring that vegetation is managed on-site, particularly during the dry season (May through November). Therefore, impacts related to the potential for the proposed project to exacerbate wildfire risks would be **less than significant with mitigation**.

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14 ALTERNATIVES

INTRODUCTION

This chapter describes reasonable alternative versions of the proposed project that could lessen impacts or that provide meaningful information to foster informed decisions. An evaluation comparing impacts of the alternatives to the impacts of the proposed project is included. The following impact discussions are presented in either a qualitative or a quantitative manner depending on resource topic, and are generally briefer than those found in the project chapters, consistent with the California Environmental Quality Act (CEQA) Guidelines Section 15126.6(d). This chapter does not repeat background discussions or other subject matter, which has already been described in the topical chapters of this EIR, but focuses on those alternative impacts which are substantively different than the impacts described for the project. Reviewers are encouraged to read the topical chapters describing project impacts prior to reading the Alternatives chapter for additional background and context that precede this chapter (i.e., Chapters 3 through 13).

REGULATORY CONTEXT

CALIFORNIA ENVIRONMENTAL QUALITY ACT REQUIREMENTS

As stated in Section 15126.6 of the CEQA Guidelines:

> *An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.*

The CEQA Guidelines provide that the discussion of alternatives in an EIR should focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project" (CEQA Guidelines Section 15126.6[b]). The CEQA Guidelines also provide that "alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project" (CEQA Guidelines Section 15126.6[f]; Public Resources Code (PRC) Sections 21002, 21002.1[b], 21081[a] [discussing mitigation of "significant" impacts]; *North Coast Rivers Alliance v. Marin Municipal Water Dist*. [2013] 216 Cal. App. 4th 614, 649; *Tracy First v. City of Tracy* (2009) 177 Cal.App.4th 912, 928 [reduced size alternative not required because it would not lessen significant effects]). The range of potentially feasible alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The potential feasibility of an alternative may be determined based on a variety of factors, including economic viability, availability of infrastructure, and other plans or regulatory limitations.

As stated in PRC Section 21081[a][3], the ultimate determination as to whether an alternative is feasible or infeasible is made by the lead agency's decision-making body.

In determining what alternatives should be considered in the EIR, it is important to acknowledge the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). The CEQA Guidelines further require that the alternatives be compared to the project's environmental impacts and that a "No Project" alternative is considered (Section 15126.6[d][e]).

CONSIDERATIONS FOR SELECTION OF ALTERNATIVES

ATTAINMENT OF PROJECT OBJECTIVES

Pursuant to Section 15126.6 of the CEQA Guidelines, an alternative must "attain most of the basic objectives of the project." The basic objectives of the project are to deliver utility-scale solar energy to Sacramento County and the SMUD region (i) support timely and cost-effective attainment of SMUD's 2030 Zero Net Carbon targets and 2030 renewable energy portfolio standards (ii) support attainment of the state's 2030 renewable portfolio standards for the SMUD region, and (iii) optimize use of existing electrical distribution infrastructure. The project objectives include the following:

- Provide a local supply of solar energy for the Sacramento County region to implement the County of Sacramento General Plan applicable to renewable energy.
- Provide cost-effective commencement of delivery of local utility-scale solar energy to support attainment of Sacramento Municipal Utility District's (SMUD's) (a) 2030 Zero Net Carbon Plan targets, and (b) Integrated Resource Plan targets.
- Support SMUD region in attainment of state 2030 Renewable Portfolio Standards.
- Comply with SMUD's Integrated Resource Plan siting and size criteria for local utility-scale solar facilities.
- Optimize use of existing electrical distribution and other infrastructure with existing capacity to minimize environmental impacts of new construction.
- Provide local employment and training opportunities for a variety of building trades.

ENVIRONMENTAL IMPACTS OF THE PROJECT

Chapters 3 through 13 of this document address the environmental impacts of implementing the proposed project. Potentially feasible alternatives were developed with consideration of avoiding or lessening or lessening environmental impacts of the project, as identified in this document.

Range of Alternatives

To foster meaningful public discussion and informed decision-making, a range of reasonable alternatives to the proposed project were developed, as summarized below. Some of the alternatives considered were infeasible and rejected without detailed analysis, for the reasons explained below.

The reasonable range of alternatives for this project is determined to consist of the proposed project, the No Project alternative, and the Modified Project Alternative (Alternative 1). CEQA does not require a particular number of alternatives, only that a reasonable range be considered. The alternatives studied constitute a reasonable range because they contain enough variation to facilitate informed decision making and public participation that leads to a reasoned choice (CEQA Guidelines, 15126.6[a]-[f]). Also, according to CEQA Guidelines Section 15126.6(d), discussion of each alternative should be sufficient "to allow meaningful evaluation, analysis, and comparison with the project." Therefore, the significant effects of each alternative are discussed in less detail than those of the project, but in enough detail to provide decision makers with perspective and a reasoned choice among alternatives to the project.

An EIR need not consider an alternative whose effects cannot be reasonably identified, whose implementation is remote or speculative, or one that would not achieve most of the basic project objectives. CEQA Guidelines Section 15126.6(e)(2) provides that if the "No Project" alternative is the environmentally superior alternative, the EIR should also identify an environmentally superior alternative among the other alternatives.

Alternatives discussed in detail below include the "No Project" alternative and Alternative 1. The purpose of the "No Project" alternative is to allow the hearing body to compare the impacts of approving the project to the impacts of not approving the project. The "No Project" alternative describes what would happen if the existing land use designations remained in effect. As outlined in Section 15126.6(f)(3) of the CEQA Guidelines, an EIR need not evaluate an alternative that is considered speculative, theoretical, or unreasonable.

The purpose of this chapter is to identify alternatives that would mitigate, lessen, or avoid the potentially significant effects of the proposed project. As described in Chapters 3 through 13 of this document, the proposed project would result in no significant unavoidable impacts and less than significant impacts with mitigation to aesthetics, agricultural resources and land use, air quality, biological resources, climate change, cultural and paleontological resources, noise, traffic and circulation, tribal and cultural resources, and wildfire.

Comparison of Alternatives

The comparison of alternatives is designed to satisfy the requirements of CEQA Guidelines Section 15126.6(d), Evaluation of Alternatives (14 CCR 15000 et seq.). This comparison does not consider the beneficial impacts of any alternative above and beyond its ability to reduce or avoid significant effects of the project.

The discussion of the environmentally superior alternative is based on a comparison of significant impacts that would result from the proposed project and the alternatives identified in the EIR. Although this EIR identifies an environmentally superior alternative, CEQA does not require the County to select the environmentally superior alternative for development. It is possible that the County could choose to balance the importance of each impact area differently and reach a different conclusion during the project approval process. Therefore, the County may approve a project that is not the environmentally superior alternative.

Alternatives Dismissed from Further Evaluation

Pursuant to CEQA Guidelines Section 15126.6(c), the alternatives that were considered but rejected as infeasible are briefly discussed below. An alternative may be considered but not carried forward for various reasons, such as not meeting the objective(s) of the project; not being feasible; conditions outside the control of the project applicant (e.g., land ownership, right-of-way acquisition); or other constraints.

Potential project alternatives were considered as part of the alternatives screening process for the draft EIR. As stated in CEQA Guidelines Section 15126.6(f)(1), factors that may be considered when a lead agency is assessing the feasibility include:

> *… site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site.*

The following discussion describes alternatives that were considered, but were ultimately rejected for the factors cited above. After further consideration of the alternatives discussed in the following sections, it was determined that they would not be feasible, would not substantially meet most of the project objectives, or would not avoid or lessen potentially significant adverse impacts that were identified for the proposed project. Therefore, these alternatives have been rejected as viable alternatives.

Alternative Site

Alternative sites are typically considered when developing EIR alternatives with the goal of avoiding or eliminating significant impacts related to the site-specific environmental impacts of a project. Early in the site selection process, alternative locations within the Sacramento Urban Services Boundary (USB) that are located adjacent to SMUD infrastructure with capacity for interconnection and that had minimal land use and environmental resource constraints were explored. In order to develop a 50-megawatt (MW) solar energy facility that could support solar-energy generation, energy storage, and the ability to tie into nearby existing SMUD electrical distribution facilities, similar to the proposed project, specific site attributes would be necessary. Development of a solar energy facility that is a similar scale as the proposed project would require certain characteristics, as determined by the project applicant, including large parcels (approximately 380 acres or larger), at a location within 50 feet of existing SMUD

transmission lines, and parcels that do not contain prime farmland or farmland of statewide importance.

Large parcels of land identified within the USB were not readily available for purchase due to their location or existing uses (e.g., Sacramento International Airport, Folsom State Prison, golf courses, etc.). Other undeveloped and underutilized properties in the County were considered, but were determined to be infeasible for this type of solar development project for a number of reasons, including the fact that Sacramento County has unmet needs for housing and there are efforts underway to provide affordable housing in some of these undeveloped and underutilized areas. To address this shortfall, the County is rezoning and redeveloping underutilized areas within Sacramento County (Sacramento County 2022). Throughout this region, finding suitable land available for solar projects is a recognized challenge. Thus, finding other large parcels adjacent to existing transmission lines that would support a utility scale solar project was unattainable.

A key objective of the project is to optimize use of existing electrical distribution infrastructure. Interconnection to SMUD's existing transmission system would allow the energy generated by the project to be delivered directly to SMUD customers. As discussed above, alternative sites within 50 feet of existing SMUD transmission lines were assessed. There is a limited supply of land available for utility scale solar projects near SMUD's transmission system, which is limited further since many of these areas are already developed, entitled for development, or subject to ongoing land use planning for residential, commercial, and industrial uses. More distant sites not adjacent to SMUD infrastructure were not reviewed further because these sites would increase project costs and would likely increase potential environmental impacts due to the need for a new transmission line route to interconnect the project to SMUD infrastructure farther away from the project site.

Finally, identification of alternative sites would be difficult to develop and permit on a timeline that meets SMUD's 2030 Net Zero Plan goals. Ultimately, the project applicant does not own or have the ability to easily acquire other sites in the region in order to provide a viable alternative site location. For these reasons, an off-site location was determined to be infeasible.

Distributed Power Generation

Distributed power generation projects such as rooftop, carport, and other infill solar projects are necessary to support SMUD's 2030 Zero Carbon Plan goals; SMUD and other developers continue to pursue all of these options. However, meeting the goals and objectives of SMUD's 2030 Zero Carbon Plan solely through locating distributed solar resources within the desired timeframe has been determined to be infeasible. Distributed generation would result in a potential reduction in impacts as compared with the proposed project as this alternative could focus facilities within developed and urbanized areas in order to generate additional energy. While this alternative would result in a net reduction in project impacts as compared with the proposed project, it is outside the control of, and could not be implemented by the project applicant, SMUD, or other counties where the project electricity would be utilized within a reasonable period of time. Some specific challenges of a large-scale distributed power generation approach include identification

of a sufficient number of potential development locations to meet the goals and the extended time associated with assessing each separate site for feasibility of installation, real estate management, permitting, engineering, and contracting. Additionally, given recent averages for rooftop solar installations, the number of new installations required to deliver up to an additional 50 MW of solar electricity by 2023 render this alternative infeasible from a practical timing perspective. SMUD's Net Zero Plan and Integrated Resource Plan studies document that SMUD would not be able to achieve its near-term renewable energy goals exclusively with rooftop solar. These challenges related to large-scale distributed power generation projects present a barrier to meet the goals of the 2030 Zero Carbon Plan. For these reasons, a distributed power generation approach was determined to be infeasible.

ON-SITE ALTERNATIVE

Once lands with willing partners were identified, preliminary environmental assessments were conducted on-site on both of the project parcels. Based on the results of these surveys and background research, the conceptual layout of the project site was adjusted to reduce or avoid potential impacts to resources such as the 100-year floodplain, prime farmland land, and biological resources, including minimizing impacts to aquatic resources within the project site. This background research and site investigation resulted in utilization of approximately one-half of each of the project parcels.

ALTERNATIVE TECHNOLOGIES

WIND ENERGY

Wind energy is another renewable energy source that could be considered at the proposed project site. Wind is a renewable source of energy, and some of the environmental impacts related to operating a wind farm could be reduced compared to other types of energy-generating facilities. The construction of a wind farm would result in temporary construction-related impacts, as would be expected for the proposed project. Once operational, wind farms do not result in air pollutant emissions (as they are a renewable, non GHG-producing energy source) and water usage requirements are typically low. However, compared to solar generating facilities, wind farms would result in greater aesthetic impacts due to the height of wind turbines and the inability to shield them with landscaping techniques. Additionally, unlike the proposed project, wind farms could generate long-term noise impacts and can result in take of avian species, if species collide with turbine blades. For these reasons, this alternative technology was not considered further.

NUCLEAR ENERGY

Nuclear power is a non-fossil fuel energy source (a renewable, non GHG-producing energy source). Unlike solar energy production, nuclear energy does not rely on the availability of the sun. Nuclear power is a controversial power source because it is viewed by the public as dangerous and there are public concerns around the transportation, storage, and disposal of spent reactor fuel. Nuclear power plants are relatively expensive to build and operate compared to other alternative power sources (such as solar and wind power). There is only one actively operating commercial nuclear power plant in California

now; which is owned and operated by Pacific Gas and Electric Company and this facility has been proposed for closure. Because of these reasons, nuclear power plants would not be a feasible alternative to a utility-scale solar generating facility. Additionally, because of the costs to build, and environmental impacts related to operational impacts such as hazardous and hazardous waste, aesthetics, number of employees working at the site, and other considerations, a nuclear power generating facility would likely result in greater environmental impacts than the proposed project. For these reasons, this alternative technology was not considered further.

Description of Alternatives

No Project Alternative

CEQA requires an evaluation of the No Project alternative so that decision makers can compare the impacts of approving the project with the impacts of not approving the project. According to CEQA Guidelines (Section 15126.6[e]; 14 CCR 15000 et seq.), the No Project alternative must include (a) the assumption that the existing environmental conditions at the time of the Notice of Preparation (NOP) (i.e., baseline environmental conditions) would not be changed since the project would not be installed and (b) the events or actions that would be reasonably expected to occur in the foreseeable future if the project were not approved. The first condition is described in the EIR for each environmental discipline as the "environmental baseline." This section defines the second condition of reasonably foreseeable actions or events. The impacts of these actions are evaluated in each issue area's analysis in this EIR.

For the purposes of the No Project alternative, it is assumed the proposed project would not be constructed. Therefore, for the purposes of the No Project alternative analysis, the applicant would not execute their lease option on the parcels comprising the proposed project site and the project would not be constructed. Existing conditions would likely remain unchanged (i.e., property would remain as agricultural land) and agricultural activities would likely continue.

Alternative 1: Modified Project Alternative

Introduction

Alternative 1 is a proposed approximately 50 MW solar photovoltaic energy-generating facility located on the southwest corner of Meiss Road and Dillard Road, adjacent to an existing solar energy facility located at 7794 Dillard Road, Sacramento County, California. Like the proposed project, Alternative 1 would be developed by Sloughhouse Solar, LLC (applicant) to sell its electricity and all renewable and environmental attributes to an electric utility purchaser under long-term contracts to help meet California Renewables Portfolio Standard goals. Under this alternative, the project footprint would be reduced from approximately 380 acres to 372 acres. It should be noted that the NOP included a total disturbance area of approximately 400 acres based on the design information that was available at that time. Since submittal of the project design filing with the NOP, the

applicant further reduced the impacts to 380 acres that was used for completing the environmental review in the EIR.

Alternative 1 was developed to address comments received from various stakeholders during the 30-day NOP scoping period, and consultation with trustee and responsible agencies. Alternative 1 includes design and engineering techniques to reduce impacts to sensitive biological resources including aquatic resources, reduced landform modifications and grading (and associated air pollutant emissions), reduction in impacts to agricultural lands of statewide importance, and reducing water demand during construction. The Alternative 1 project design was focused on minimizing impacts to environmental resources within the 372-acre Alternative 1 site while meeting the project objectives.

The Alternative 1 site is fully encompassed by the proposed project site and thus, nearly all of the information in Chapter 2, “Project Description”, for the proposed project would also apply to the Alternative 1 site. Plate ALT-1 shows an overlay of the proposed project with Alternative 1 for a visual comparison.

Alternative 1 Location

The Alternative 1 site is within two existing legal parcels, but the Alternative 1 site does not encompass the entirety of these two existing parcels. The Alternative 1 site comprises approximately 372 acres. Refer to Plate ALT-2 for an illustration of the Alternative 1 site within the two existing parcels that contain the Alternative 1 site.

Environmental Setting

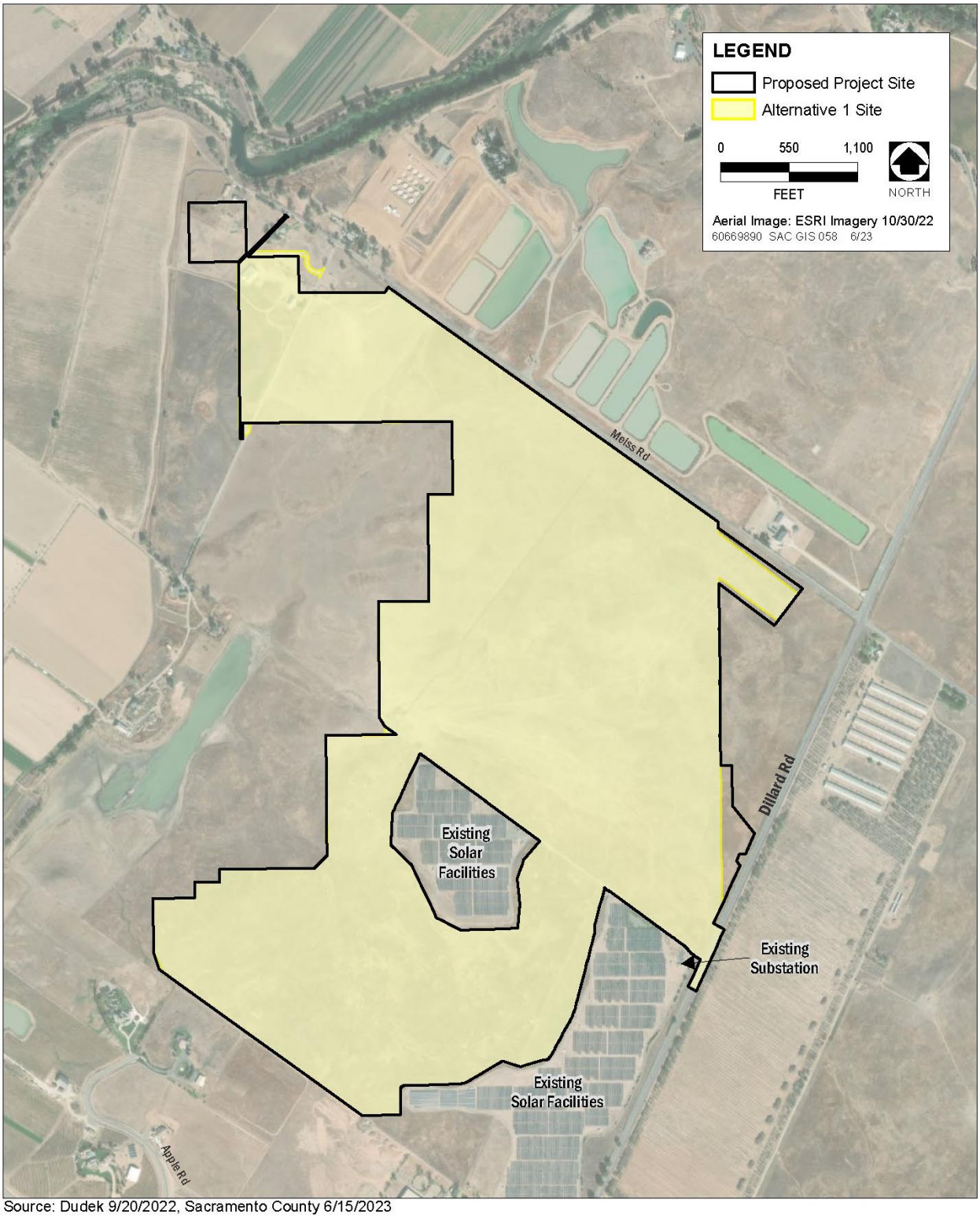
The same environmental setting described in Chapter 2, “Project Description”, applies also to Alternative 1. Alternative 1 site would reduce the footprint by 8 acres (a total of 372 acres compared to 380 acres). Generally, the site is within the same topography, land uses and, and zoning as described in Chapter 2 for the proposed project. However, project siting and design techniques were utilized to reduce impacts to key resources within these land use categories, including impacts to sensitive biological resources.

Alternative 1 Background

Alternative 1 is proposed by the project applicant to minimize impacts to environmental resources through reducing the project footprint and implementing project design measures.

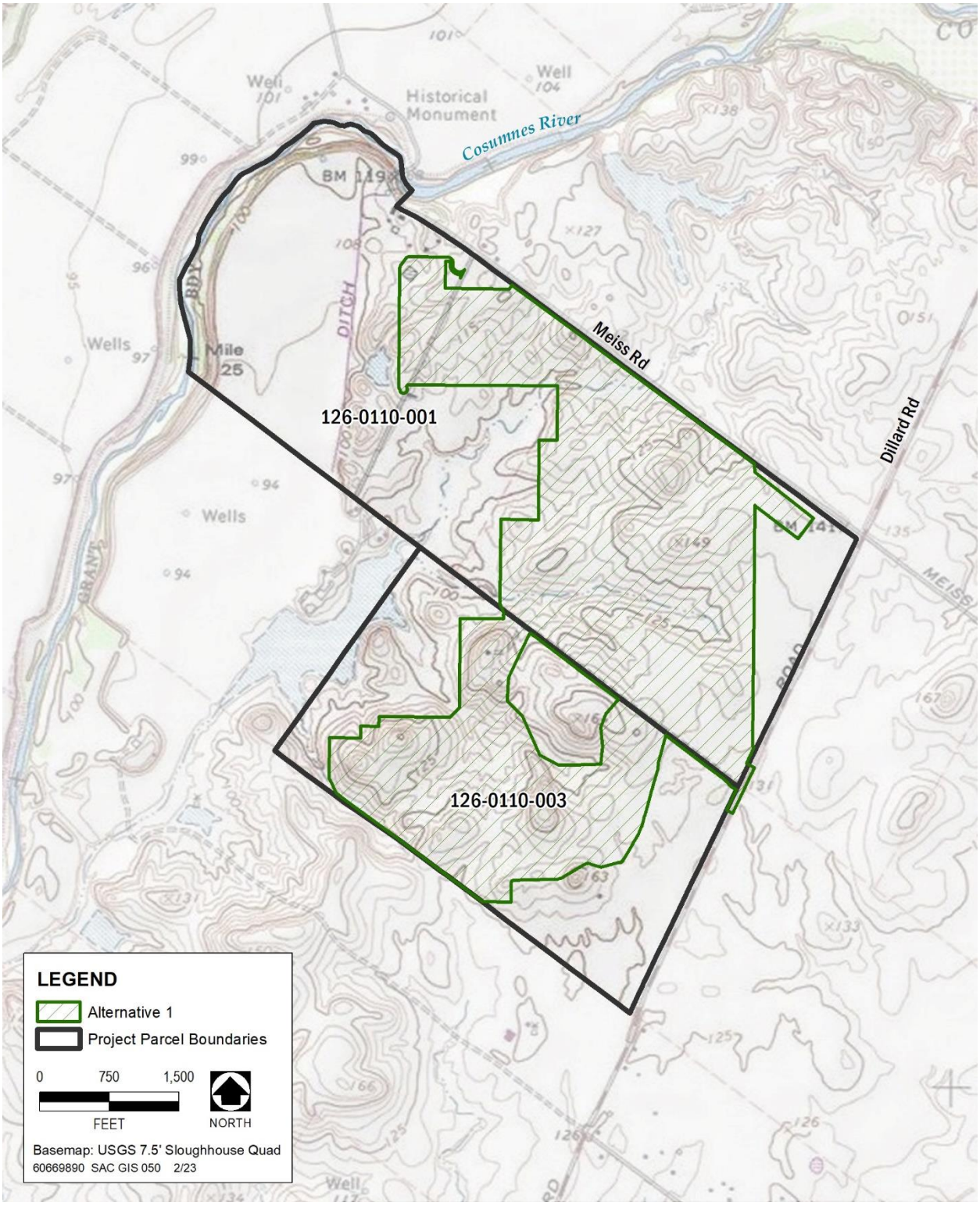
As identified in this EIR, the proposed project would not result in any significant and unavoidable impacts to environmental resources. The focus of the project design refinement process was to reduce impacts to aquatic resources, reduce, the amount of grading that would be required for the project and resulting landform effects while accomplishing the basic project objectives. Table ALT-1 includes a summary of the reduction in acreage physically affected by the project – from preliminary design, to the proposed project, and then as a part of Alternative 1.

Plate ALT-1. Comparison Overlay of the Proposed Project and Alternative 1



Source: Dudek 9/20/2022, Sacramento County 6/15/2023

Plate ALT-2. Alternative 1 Project Site Boundary



Source: Dudek 2022, Compiled by AECOM 2022

Table ALT-1: Project Acreage Summary

Project Design / Study Area	Acreage (approx.)
Preliminary Site Plan (Notice of Preparation October 2021)	400 (impact footprint)
Proposed Project Site	380 (impact footprint)
Alternative 1 Site	372 (impact footprint)

The applicant has entered into an agreement to supply SMUD with the renewable energy for use in the SMUD service area. Just as for the proposed project, Alternative 1 would assist SMUD in achieving SMUD's Renewable Portfolio Standard (RPS) goals for renewable energy, and carbon reduction targets, including SMUD's 2030 Zero Carbon Plan. The 2030 Zero Carbon Plan is a plan to eliminate carbon emissions from SMUD's power supply by 2030. The energy storage elements of Alternative 1 would help balance supply and demand by capturing and storing renewable energy generated during daylight hours to meet peak evening demand.

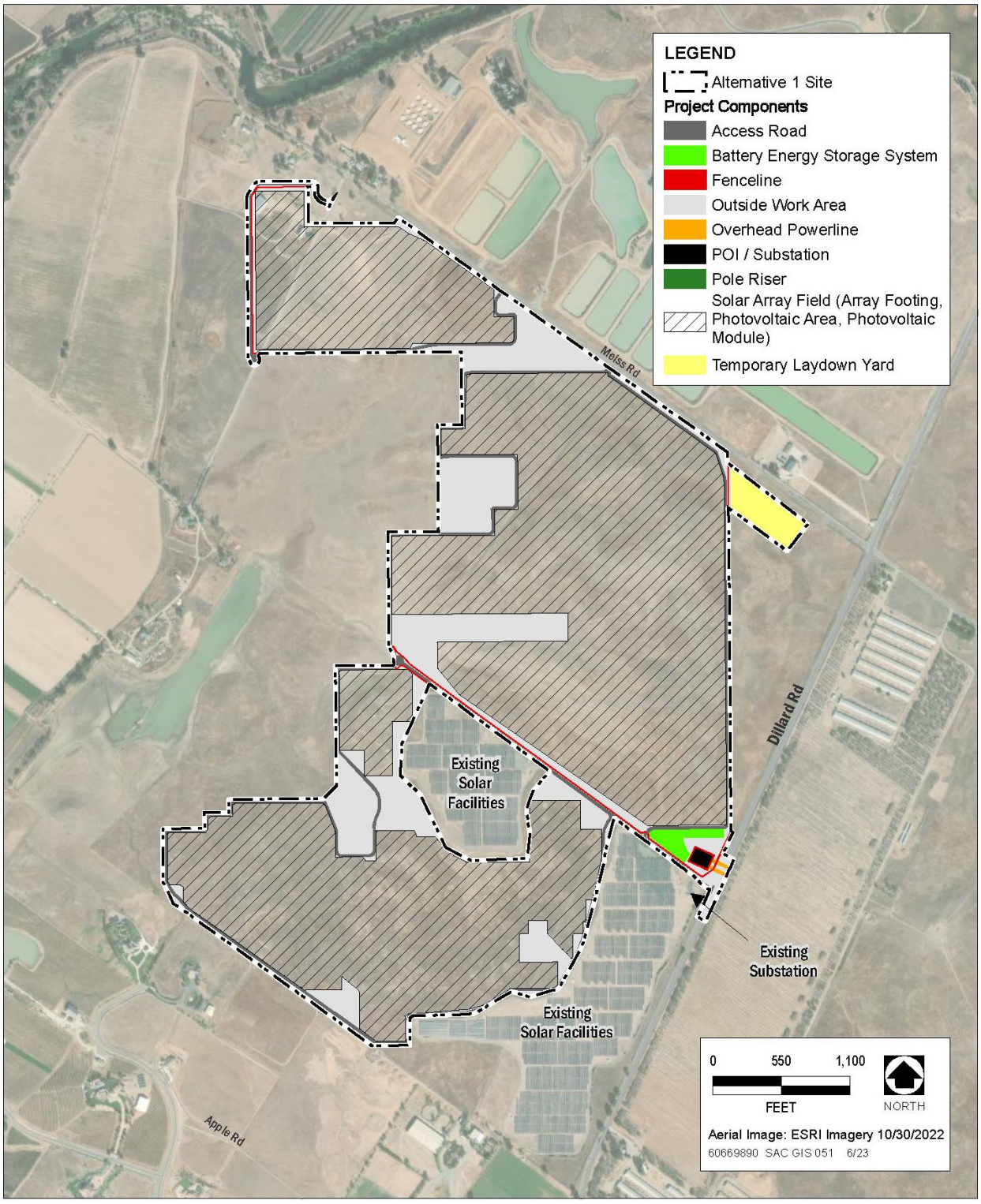
ALTERNATIVE 1 PROJECT COMPONENTS

Like the proposed project, Alternative 1 consists of an approximately 50-MW solar energy generating facility with an energy storage component. Chapter 2, "Project Description", describes the energy generation process – this also applies to Alternative 1.

The design and construction of the solar arrays, energy storage facilities, and auxiliary facilities (e.g., substation) required for Alternative 1 would be consistent with all applicable County building standards, as required by Sacramento County. Plate ALT-3 shows the Alternative 1 site plan. The total acreage within and including the fence line of the Alternative 1 site is approximately 372 acres, an 8-acre reduction from the proposed project. Table ALT-2 describes the component acreage of the Alternative 1 footprint.

The facilities for Alternative 1 would be generally the same as those described for the proposed project in Chapter 2. However, the facilities proposed in Alternative 1 have undergone additional design and engineering measures as compared to the proposed project in order to avoid sensitive resources and reduce earth moving activities, and landform modifications. Outside work areas were established within the Alternative 1 project site to ensure that sensitive resources are better avoided by Alternative 1 construction activities. The Alternative 1 photovoltaic arrays would be mounted on fixed-tilt or tracker structures. The major components would include: photovoltaic solar modules; fixed-tilt and tracker structures; inverters and pad-mounted transformers, substation and switchyard; battery energy storage; and ancillary facilities such as fencing, controlled access gates, raw water/fire water storage, stormwater retention basins, equipment control buildings, and parking within the Alternative 1 site. The design and construction of the buildings, solar arrays (panels, etc.), energy storage facilities, and auxiliary facilities would be consistent with Sacramento County building standards. As with the proposed project, the design of Alternative 1 is at a level of detail to allow for a quantitative comparison of the effects of the proposed project and Alternative 1 against existing conditions and the No Project alternative.

Plate ALT-3. Alternative 1 Site Plan



Source: Dudek 2022, Compiled by AECOM 2022

Table ALT-2: Alternative 1 Acreage

Project Component	Approximate Acreage
Access Road: Fire – Aggregate Base	3.12
Access Road: Internal Perimeter – Aggregate Base	10.30
Access Road: Water Crossing – Aggregate Base	0.07
Array Footing / Pile	0.30
Array Footing / Pile (Large)	0.16
Battery Energy Storage	1.56
Fenceline	0.46
Laydown Yard	4.27
Outside Work Area	58.77
Overhead Powerline	0.26
Photovoltaic Area	213.50
Photovoltaic Module	78.45
Point of Interconnection / Substation	0.49
Pole Riser	0.02
TOTAL	**371.7 (Approximately 372)**

Source: Dudek 2022
* Rounded to nearest one-tenth acre

Construction

Alternative 1 utilized engineering measures and design optimization to reduce construction impacts as compared to the proposed project. Earth moving activities were reduced, eliminating the need to export 78,000 cubic yards of material. As a result, Alternative 1 would reduce truck traffic by avoiding the estimated 222 truck trips per day required for the disposal of grading material under the proposed project. As with the proposed project, the number of workers expected on-site during construction of Alternative 1 would vary over the construction period and would average approximately 150 workers per day. Deliveries of equipment and supplies to the Alternative 1 site would also vary over the construction period but would range from 5 to 40 round trips, averaging approximately 10 round trips during the construction period. On-site parking for worker vehicles would be provided during construction. The parking lot would move to adjacent areas as new phases are constructed. Similar to the proposed project, Alternative 1 would be constructed over approximately eight months to minimize temporary construction impacts. The same construction activities that were described for the proposed project would generally apply to Alternative 1.

Similar to the proposed project, the typical construction work hours are expected to be from 6:00 a.m. to 4:00 p.m. The schedule may change based on a need to comply with various biological mitigation measures, overall construction timing, or worker safety such

as avoidance of excessive midday heat. Work at night would be performed occasionally within some areas of the Alternative 1 site.

Temporary facilities such as construction trailers, temporary septic systems or holding tanks, parking areas, material receiving/storage areas, water storage facilities, construction power service, and recycling / waste handling areas would be developed on-site to support construction activities under Alternative 1.

Alternative 1 construction activities would utilize existing on-site wells during construction; water is required for a variety of construction activities, including dust suppression, earth compaction, the creation of engineered fill, and concrete preparation. Construction-phase water demand would be greatest during site grading which would consist of disc and roll compaction over the Alternative 1 site. An estimated reduction of 82 acre-feet (AF) would result with Alternative 1 (178 AF for the project compared to 96 AF for Alternative 1) (Dudek 2022). The Alternative 1 site would be seeded using seed drills or broadcast seeding followed by light raking. Hydroseeding and hydro-mulching for Alternative 1 may also be used depending on the timing and site-specific conditions. Seeding would be completed in accordance with the Agricultural Management Plan.

Operation

Once constructed, the Alternative 1 facility would primarily be operated remotely through a local solar operations and maintenance company, facilitated by the project supervisory control and data acquisition (SCADA) system. The operations would generate 4 to 10 trips per day for maintenance and security personnel. To ensure safety, the property would be fenced, security lighting would be installed, and high-voltage warning signs posted. The fence would be periodically monitored and repaired if necessary.

Similar to the proposed project, Alternative 1 access would be from Dillard Road and Meiss Road. Access would be through security gates and multiple gate-restricted access points would be used during construction and operation. Water use for Alternative 1 would be less compared to the proposed project. Approximately 2 acre-feet per year (AFY) would be provided from on-site groundwater and used for operational activities such as dust control and panel washing, compared to 30 AFY estimated for the proposed project during operations and maintenance.

The photovoltaic modules and ancillary equipment would be constructed of fire-resistant material. The lighting system would provide operation and maintenance personnel with illumination in both normal and emergency conditions. On-site communications during Alternative 1 operations would utilize telephone and internet services provided via overhead or underground lines and/or microwave tower or cellular service from a local provider.

Alternative 1 includes the implementation of an Agricultural Management Plan including agricultural grazing activities during operations. The Agricultural Management Plan would address the same topics as the Agricultural Management Plan developed for the proposed project (Dudek 2023). This would include site-specific seeding based on: (1) soil conditions; (2) appropriate grassland species; and (3) dietary preferences of grazing

animals. Landscape maintenance and/or grazing activities would occur to manage vegetation and facilitate use by wildlife.

Decommissioning and Site Restoration

The operation of Alternative 1 would be 35 years, which is the same as for the proposed project. As required by Sacramento County's decommissioning requirements, Alternative 1 would be decommissioned at the end of its operational life. The draft decommissioning plan that was prepared for the proposed project would also apply to Alternative 1. During decommissioning, Alternative 1 components that are no longer needed would be removed from the site and recycled or abandoned in place for all underground conductors. As with the proposed project, materials such as glass, steel, aluminum, and copper would be recycled and components such as solar panels would be recycled in accordance with the photovoltaic manufacturer recycling program.

The Alternative 1 Spill Containment and Countermeasures Plan would be updated to cover handling these materials during decommissioning. A Stormwater Pollution Prevention Plan would also be required during decommissioning.

The same restoration activities and monitoring program that are required for the proposed project and described in Chapter 2, "Project Description", would be applicable to the Alternative 1 project decommissioning and site restoration.

An estimated total of 96 AF of water would be used for the Alternative 1 decommissioning activities (Dudek 2022), which would be less than the decommissioning water needs estimated for the proposed project (178 AF).

Evaluation of Alternatives

Aesthetics

No Project Alternative

Under the No Project alternative, the existing conditions would remain unchanged and agricultural activities, including year-round cattle grazing, at the project site would continue. The potentially significant impact identified for the proposed project related to the degradation of the existing visual character or quality of the project site related to aesthetics would not occur. Therefore, impacts related to aesthetics would be reduced compared to the proposed project.

Alternative 1

The same environmental setting and regulatory setting described in Chapter 3, "Aesthetics", apply to Alternative 1.

Alternative 1 would have **no impact** related to substantial adverse effects on a scenic vista because the Alternative 1 site does not include any scenic vistas and development of Alternative 1 would not affect any existing views of any scenic vista. Additionally, there

are no designated or eligible state scenic highways adjacent to or in the vicinity of the Alternative 1 site, thus Alternative 1 would have **no impact** related to scenic resources within a designated scenic highway.

IMPACT ALT-AE-1: SUBSTANTIALLY DEGRADE THE EXISTING VISUAL CHARACTER OR QUALITY OF THE PROJECT SITE

The Alternative 1 project site would have a slightly smaller footprint (a total of 372 acres compared to 380 acres). The visual simulations in Chapter 3 would generally apply to Alternative 1. The existing visual quality of the Alternative 1 site is moderate to low. As with the proposed project, the conversion from open grassland to solar generating facilities under Alternative 1 would represent a visual change. Similar to the proposed project, a substantial degradation of the existing visual character and quality from Meiss Road and Dillard Road would occur in the short term under Alternative 1, resulting in a potentially significant impact prior to mitigation.

Alternative 1 would require that a Landscape Screening and Irrigation Plan be prepared and implemented prior to the issuance of permits for grading, building, or improvement plans, similar to the proposed project. As required by this plan, the landscape screening would be monitored and maintained throughout the 35-year lifespan of Alternative 1. Additionally, Alternative 1 would be required to comply with the Countywide Design Guidelines and would go through the County's Design Review Process to ensure compatibility with County regulations governing visual quality, as discussed in Chapter 3. Mitigation Measure AE-1 (Prepare and Implement a Landscape Screening and Irrigation Plan that Will be Monitored for Long-term Success) is detailed in Chapter 3. Because this mitigation measure would also be applied to Alternative 1, and because this would reduce the potentially significant impacts associated with degradation of visual character and quality by planting and maintaining landscape screening along Dillard Road and Meiss Road, the resulting impact after mitigation would be **less than significant with mitigation**.

IMPACT ALT-AE-2: CREATE SUBSTANTIAL NEW SOURCES OF LIGHT AND GLARE

The analysis of this impact that applied to the proposed project in Chapter 3, "Aesthetics", would also apply to Alternative 1. As provided in the discussion that follows, the results of a glare analysis performed for the Alternative 1 solar arrays demonstrates that hazardous glare directed towards either aircraft or people on the ground would not occur. Although operation of the proposed solar facilities would result in minor new sources of nighttime security lighting, construction-related nighttime lighting could result in substantial glare and potential sleep disruption for nearby residents. As described below, the County would require implementation of Mitigation Measure AE-2 (Prepare a Construction Lighting Plan) for Alternative 1, which would reduce the potential impact of light and glare during construction to **less than significant with mitigation.**

GLARE ANALYSIS

In July 2022, Dudek Consulting prepared a Glare Analysis Report for the Alternative 1 site plan (Dudek 2022), which is included as Appendix ALT-1. Dudek conducted the glare analysis for Alternative 1 per the Federal Aviation Administration's (FAA's) recommended

procedures described in its Technical Guidance for Evaluating Selected Solar Technologies on Airports (FAA 2018), and the geometric glare modeling software utilized by Dudek complies with interim FAA policy regarding solar energy system projects on federally obligated airports[1] (78 FR 63276–63279). The findings of the 2022 Glare Analysis Report for Alternative 1 concluded that Alternative 1 would not result in any significant glare impacts when analyzed in accordance with preferred FAA methodology for assessing impacts to aviation facilities and activities.

NIGHTTIME LIGHTING

Nighttime lighting during construction and decommissioning phases may be utilized for Alternative 1. If nighttime construction activities were to occur within 500 feet of Meiss Road, Dillard Road, or the two residences at 12500 and 12501 Simpson Ranch Court, nighttime lighting associated with that construction would result in glare for motorists on the adjacent roadways and could result in sleep disruption for adjacent residences. Therefore, this impact is considered potentially significant, but would be reduced to less than significant with mitigation, as described below.

The operational phase for Alternative 1 would require only minor nighttime security lighting at the substation, office, and battery storage buildings, none of which would be located in proximity to existing off-site residences. Nighttime operational lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives and would be shielded and oriented to focus illumination on the desired areas, thereby minimizing light spillover and eliminating glare for motorists traveling on Dillard Road. Operational lighting would be motion activated, shielded, and pointed downwards. Therefore, the operational nighttime lighting required for Alternative 1 would not result in substantial glare, skyglow, or sleep disruption, and is considered a **less than significant** impact.

IMPACT CONCLUSION

Alternative 1 would not result in a substantial new source of daytime glare that would result in a hazard for aircraft pilots or people on the ground. Furthermore, the landscaping proposed along Meiss Road would help to screen glare from the proposed solar arrays in relationship to residents and motorists north of the project site. Additionally, operation of the proposed Alternative 1 solar facilities would result in only minor new sources of nighttime lighting, which would not result in substantial nighttime glare or skyglow effects.

However, nighttime lighting associated with Alternative 1 construction around the periphery of the Alternative 1 site would result in glare for motorists on adjacent roadways and could result in sleep disruption for nearby residents; furthermore, nighttime lighting in the interior of the Alternative 1 site could result in skyglow effects. Similar to the proposed

[1] An airport is federally obligated when the airport owner has accepted federal funds to buy land or develop or improve the airport. With the acceptance of federal funds, airports agree to comply with certain grant assurances, some of which relate to tenants and businesses operating on an airport. The FAA enforces these obligations through its Airport Compliance Program.

project, the County would require the preparation and implementation of a construction lighting plan for Alternative 1. Mitigation Measure AE-2 (Prepare a Construction Lighting Plan) is detailed in Chapter 3. Implementation of this mitigation measure would reduce the significant short-term temporary impacts associated with glare, skyglow, and potential sleep disruption during nighttime construction activities to a **less-than-significant** level.

Agricultural Resources and Land Use

No Project Alternative

Under the No Project alternative, the existing conditions would remain unchanged and agricultural activities at the project site would continue. The potentially significant impacts identified for the proposed project related to the conversion of agricultural land to non-agricultural use would not occur. Therefore, impacts related to agricultural resources and land use would be reduced compared to the proposed project.

Alternative 1

The same general environmental setting and regulatory setting described in Chapter 4, "Agricultural Resources and Land Use", apply to Alternative 1. Alternative 1 avoids all prime farmland and farmland of statewide Importance.[2] Alternative 1 also reduces effects of the proposed project on Farmland of Local Importance and Grazing Lands, as described further below.

Alternative 1 would not conflict with existing zoning for agricultural use. The Alternative 1 site is currently zoned by Sacramento County as AG-20, which anticipates agricultural use of this land and is intended to promote the long-term agricultural use and discourage the premature and unnecessary conversion of agricultural land to urban use. Alternative 1 is categorized as Commercial II Solar Facilities by the Sacramento County Zoning Code and approval of a Use Permit is required for this use under the AG-20 zoning designation. The requirements described for the proposed project in Chapter 4 would also apply to Alternative 1. The Sacramento County Board of Supervisors would evaluate the effects of Alternative 1 on adjacent properties and potential conflicts with the AG-20 zoning designation, and condition Alternative 1, as necessary, to ensure compatibility of Alternative 1 with surrounding uses and zoning (Sacramento County 2021). With compliance with permit conditions, Alternative 1 would not conflict with zoning for agricultural use. Therefore, no impact would occur.

[2] There is a small area (<0.2 acres) on the east side of Dillard Road where the proposed project would tie into the existing SMUD powerlines that consists of the Dillard Road shoulder that is mapped in the DOC database as farmland of statewide importance. Although this land is designated as such on maps, the tie-in activities on this road shoulder area would not impact agricultural resources here as they would be located on the road shoulder, rather than in the adjacent agricultural fields.

There are no lands under Williamson Act contract on the Alternative 1 site. Therefore, implementing Alternative 1 would not conflict with an existing Williamson Act contract. Therefore, **no impact** would occur.

The Alternative 1 site is not zoned as forestland, timberland, or a Timberland Production Zone. Thus, Alternative 1 would not conflict with existing zoning for, or cause rezoning of, forestry resources. Therefore, **no impact** would occur.

The Alternative 1 site does not contain timberland as defined by PRC Section 4526 or contain 10 percent native tree cover that would be classified as forestland under PRC Section 12220(g). Thus, Alternative 1 would not result in conversion of forest land to non-forest use. Therefore, **no impact** would occur.

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 Alternative 1 site is a rural area of unincorporated Sacramento County, and the nearest established community, Simpson Ranch, is located 0.4 mile south of the southern Alternative 1 site boundary. Alternative 1 would not include any linear feature, such as new roadways, or any physical feature that would create a barrier, divide, or separate adjacent land uses or hinder access. Therefore, **no impact** would occur.

IMPACT ALT-AL-1: CONVERSION OF AGRICULTURAL LAND TO NON-AGRICULTURAL USE

The solar development footprint of Alternative 1 (372 acres) is approximately 8 acres less than the solar development footprint of the proposed project (380 acres). Once the solar facility is operational, the agricultural lands within the Alternative 1 site would remain available for livestock and grazing.

Most of the Alternative 1 site would consist of pole-mounted solar panel arrays. In addition, an electrical substation, battery storage buildings, small one-story office/restroom building, internal roadways, chain link fencing and gates, and other ancillary facilities would be developed. For converted areas, the same analysis of impacts applied to the proposed project in Chapter 4, “Agricultural Resources and Land Use”, would also apply to Alternative 1.

The Alternative 1 site is not designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland; however, the site is comprised of grazing land (301 acres), farmland of local importance (65 acres), other land (5 acres), and urban built up land (less than 1 acre).[3] As discussed in Chapter 4, the Sacramento County General Plan Policy AG-5 defines the loss of 50 acres or more of Farmland of Local Importance and Grazing Land outside of the USB as a substantial conversion of farmland. Alternative 1

[3] There is a small area (<0.2 acres) on the east side of Dillard Road where the proposed project would tie into the existing SMUD powerlines that consists of the Dillard Road shoulder that is mapped in the DOC database as farmland of statewide importance. Although this land is designated as such on maps, the tie-in activities on this road shoulder area would not impact agricultural resources here as they would be located on the road shoulder, rather than in the adjacent agricultural fields.

would require temporary ground disturbance during installation of project facilities. The electrical substation, battery storage foundations, entrances, and interior access roads (unpaved but with an aggregate base) would result in approximately 16 acres of new impervious surfaces, representing about 4.5 percent of the total Alternative 1 site.

During project operations, the remainder of the Alternative 1 site would be maintained as dryland pasture supporting a combination of grassland species and non-invasive forbs. In addition, the Alternative 1 site would include concurrent grazing operations pursuant to an Agricultural Management Plan (Dudek 2023). With the implementation of the Agricultural Management Plan, the conversion of agricultural land to non-agricultural uses by Alternative 1 would be less than 16 acres.

As described in Chapter 4, Alternative 1 would also be decommissioned in accordance with Sacramento County's decommissioning requirements; restoration activities would be required to return the Alternative 1 site to agriculture use (i.e., livestock grazing) and a monitoring program would be established to confirm that decommissioning restoration is successful. While the applicant proposes to maintain grazing on-site during operation of the facility, should grazing be discontinued or if the site is otherwise converted to a non-agricultural use, the impact under Alternative 1 would be **potentially significant** based on Sacramento County General Plan Policy AG-5.

Alternative 1 would require that the project applicant implement an Agricultural Management Plan prior to issuance of a Building Permit. The Agricultural Management Plan would be implemented throughout the operational life of Alternative 1 and ensure ongoing use of the Alternative 1 site for grazing to achieve the objectives of the Agricultural Management Plan. Mitigation Measure AL-1 (Implement the Agricultural Management Plan) is detailed in Chapter 4. Though developed for the proposed project, this mitigation measure would also apply to Alternative 1, and would establish on-site conditions to ensure ongoing use of the Alternative 1 site for agricultural use. To ensure the Alternative 1 site is continually used for agricultural use through the operational life of the project and to maintain the site's soil characteristics, implementation of an Agricultural Management Plan would be required. As a result, with implementation of Mitigation Measure AL-1, the resulting impact would be **less than significant with mitigation**.

IMPACT ALT-AL-2: CHANGES IN THE EXISTING ENVIRONMENT THAT COULD INDIRECTLY RESULT IN CONVERSION OF FARMLAND TO NON-AGRICULTURAL USE

As discussed in Chapter 4, only portions of APNs 126-0110-001 and 126-0110-003 would be utilized for the proposed project (see Plate PD-2 in Chapter 2) – the same is true for Alternative 1. The northern portion of APN 126-0110-001 outside of the Alternative 1 site is actively farmed and designated as Prime Farmland and APN 126-0110-003 is actively grazed. The actively farmed portion of APN 126-0110-001 outside of the Alternative 1 site boundary would not be encroached upon and the parcel would not become fragmented, reduced in size, and/or irregularly shaped to such a degree that continuing agricultural land uses could be less profitable or otherwise less feasible. In addition, Alternative 1 would not impede the movement of agricultural equipment at surrounding agricultural operations. All construction equipment storage, construction areas, and access roads would be confined to the Alternative 1 site and Alternative 1 operations would not

substantially increase vehicular traffic in areas where agricultural equipment uses roads. Therefore, Alternative 1 would not indirectly result in other changes in the physical environment that could result in the conversion of agricultural land, including agricultural land designated as prime farmland, to non-agricultural uses. For similar reasons, Alternative 1 operations would not conflict with the County's Right-to-Farm Ordinance. This impact would be **less than significant**.

IMPACT ALT-AL-3: CONSISTENCY WITH PLANS, POLICIES, AND REGULATIONS

The analysis of this impact applied to the proposed project in Chapter 4, "Agricultural Resources and Land Use", would also apply to Alternative 1. Consistency issues between implementation of Alternative 1 and the County General Plan or other land use plans and policies (i.e., South Sacramento Habitat Conservation Plan, and the Mather Airport Land Use Compatibility Plan) are related to land use regulations, which are, in part, based on avoiding or otherwise restricting uses that would adversely impact resources at the Alternative 1 site or adjacent land uses. While EIRs must discuss inconsistencies between proposed projects and applicable plans, plan consistency is not generally a CEQA issue.

Specific impacts and consistency issues associated with agricultural resources are discussed in Impact ALT-AL-1 above, and in other resource and issue areas that are addressed in each technical chapter of this document, as appropriate (e.g., the South Sacramento Habitat Conservation Plan is addressed in Chapter 6, Biological Resources), and summarized in relation to Alternative 1 in this Chapter. These technical chapters provide a detailed analysis of other relevant physical environmental effects that could result from implementation of Alternative 1 and identify mitigation measures, as necessary, to reduce impacts. Implementation of Alternative 1 would not conflict with adopted County General Plan policies or other land use plans, policies, or regulations that would generate any adverse physical impacts beyond those addressed in detail in the environmental chapters of this document (i.e., air quality, biological resources, cultural resources, etc.), as summarized in this Alternatives Chapter.[4] Therefore, this impact would be **less than significant**.

AIR QUALITY

NO PROJECT ALTERNATIVE

Under the No Project alternative, the existing conditions would remain unchanged and agricultural activities, including year-round cattle grazing, at the project site would continue. The potentially significant impacts identified for the proposed project related to the potential for the project to conflict with or obstruct the applicable air quality plan and result in a cumulatively considerable net increase of criteria air pollutant emissions would not occur. Therefore, impacts related to air quality would be reduced when compared with the impacts of the proposed project.

[4] "The issue of whether a proposed project is consistent with a county's general plan is not a CEQA issue…" (*The Highway 68 Coalition v. County of Monterey, et al.* [6th Dist. 2017] Cal.App.5th).

ALTERNATIVE 1

The same environmental setting and regulatory setting described in Chapter 5, "Air Quality", apply to Alternative 1. Refer to Table AQ-1 for a summary the local ambient air quality and Table AQ-2 for the National and California Ambient Air Quality Standards. Table AQ-3 summarizes the regional attainment status for each pollutant.

IMPACT ALT-AQ-1: CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE APPLICABLE AIR QUALITY PLAN

CONSTRUCTION AND DECOMMISSIONING

As detailed below in Impact ALT-AQ-2 and shown in Table ALT-3, emissions generated during construction could exceed the Sacramento Metropolitan Air Quality Management District (SMAQMD) thresholds of significance for NO_X and PM_{10}. Alternative 1 would require less grading and landform modifications compared to the proposed project and would result in balanced cut and fill volumes. The reduced grading and balancing of cut and fill would reduce criteria air pollutant emissions compared to the proposed project. Before implementation of the mitigation measures described in Chapter 5, "Air Quality", the construction and decommissioning activities associated with Alternative 1 could result in a potentially significant temporary contribution to regional air pollution related to NO_X and PM_{10} and thereby could conflict with air quality plans applicable to the SMAQMD.

Table ALT-3: Alternative 1: Summary of Maximum Daily and Annual Construction- and Decommissioning Related Emissions of Criteria Air Pollutants and Precursors

Description	ROG (lbs/day)	NO_X (lbs/day)	PM_{10} [1] (lbs/day)	$PM_{2.5}$ [1] (lbs/day)	PM_{10} [1] (tons/year)	$PM_{2.5}$ [1] (tons/year)
Construction Emissions	**46.00**	**126.44**	**80.80**	**14.71**	**3.75**	**0.74**
SMAQMD Threshold of Significance	N/A	85	80	82	14.6	15
Threshold Exceeded?	N/A	**Yes**	**Yes**	No	No	No
Decommissioning Emissions	**21.94**	**33.29**	**28.18**	**4.51**	**1.58**	**0.25**
SMAQMD Threshold of Significance	N/A	85	80	82	14.6	15
Threshold Exceeded?	N/A	No	No	No	No	No

Notes:
BMP = best management practices; N/A = not applicable; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 micrometers in diameter; $PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter; ROG = reactive organic gases; SMAQMD = Sacramento Metropolitan Air Quality Management District

[1] PM emissions include implementation of fugitive dust control measures listed as BMPs; therefore, this analysis utilized the non-zero SMAQMD recommended PM significance threshold.

Source: See Appendix ALT-2 for detailed construction assumptions and calculations.

Alternative 1 would require that the project applicant and construction contractor implement best management practices and specific control practices during construction and decommissioning phases, as described for the proposed project in Mitigation Measures AQ-2a, AQ-2b, AQ-2d, and AQ-2e in Chapter 5. Mitigation Measure AQ-2a (Implement Basic Construction Emission Control Practices (Best Management Practices) and

Enhanced Fugitive Particulate Matter (PM) Dust Control Practices during Construction and Decommissioning); Mitigation Measure AQ-2b (Reduce Construction Equipment Exhaust-Related Emissions during Construction); Mitigation Measure AQ-2d (Submit a Construction Emissions Control Plan); and Mitigation Measure AQ-2e (Off-site Construction Mitigation) are detailed in Chapter 5 and would also be required for Alternative 1. Because these mitigation measures would reduce Alternative 1 construction emissions to a level below the thresholds of significance, Alternative 1 would not conflict with applicable air quality plans and would be consistent with the applicable County General Plan policies related to air quality. After implementation of the mitigation measures listed above, Alternative 1 would reduce criteria air pollutant emissions compared to the proposed project. This impact would be **less than significant with mitigation.**

OPERATIONS

The same analysis of this impact applied to the proposed project in Chapter 5, "Air Quality", would also apply to Alternative 1. Operation of Alternative 1 could generate PM emissions that would exceed the SMAQMD's threshold for PM emissions. As a condition of a building permit, the project applicant would be required to implement best management practices for fugitive dust control during operational and maintenance activities associated with Alternative 1 to reduce operational particulate matter emissions. Mitigation Measure AQ-2f (Implement Best Management Practices for Reducing Operational PM Emissions) is detailed in Chapter 5. Because this mitigation measure would reduce operational particulate matter emissions, the resulting impact after mitigation would be **less than significant with mitigation**.

IMPACT ALT-AQ-2: 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

CONSTRUCTION AND DECOMMISSIONING

Alternative 1 would generate substantially lower emissions than the proposed project because Alternative 1 does not require off-site material export. Compared to the proposed project, daily emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$, would be approximately 5, 92, 24, and 7 pounds lower, respectively.

The maximum daily and annual emissions associated with construction and decommissioning activities of Alternative 1 are presented in Table ALT-3, and compared to the SMAQMD-recommended thresholds of significance for construction.

As shown in Table ALT-3, construction of Alternative 1 would result in NO_X and PM_{10} emissions that would exceed SMAQMD-recommended thresholds of significance. Therefore, the project applicant and construction contractor would be required implement best management practices and specific control practices during construction and decommissioning phases, as described in Mitigation Measures AQ-2a, AQ-2b, AQ-2d, and AQ-2e in Chapter 5. Mitigation Measure AQ-2a (Implement Basic Construction Emission Control Practices (Best Management Practices) and Enhanced Fugitive PM Dust Control Practices during Construction and Decommissioning); Mitigation Measure AQ-2b (Reduce Construction Equipment Exhaust-Related Emissions during

Construction); Mitigation Measure AQ-2d (Submit a Construction Emissions Control Plan); and Mitigation Measure AQ-2e (Off-site Construction Mitigation) are detailed in Chapter 5, and would also be required for Alternative 1. Mitigation Measure AQ-2c would not be required, as Alternative 1 does not require off-site material export.

Mitigated emissions estimates associated with construction of Alternative 1 are shown in Table ALT-4, based on implementation of Mitigation Measures AQ-2a and AQ-2b.

Table ALT-4: Alternative 1: Summary of Mitigated Maximum Daily Construction-Related Emissions of Criteria Air Pollutants and Precursors

Emissions Source	ROG (lbs/day)	NO_X (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Emissions	**42.07**	**73.92**	**78.44**	**12.56**
SMAQMD Threshold of Significance	N/A	85	80	82
Threshold Exceeded?	N/A	No	No	No

Notes:
lbs/day = pounds per day; N/A = not applicable; NO_X = nitrogen oxides; PM_{10} = particulate matter less than 10 micrometers in diameter; $PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter; ROG = reactive organic gases; SMAQMD = Sacramento Metropolitan Air Quality Management District
Source: See Appendix ALT-2 for detailed construction assumptions and calculations.

After implementation of the mitigation measures listed above, Alternative 1 emissions would not exceed the SMAQMD thresholds of significance and the resulting emissions would be lower than those of the proposed project. Because these mitigation measures would reduce Alternative 1 construction and decommissioning emissions to a level below the thresholds of significance, Alternative 1 would not 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 and this impact would **be less than significant with mitigation**.

OPERATIONS

Table ALT-5 summarizes the maximum daily emissions (in pounds per day) and annual emissions (in tons per year).

Table ALT-5: Alternative 1: Summary of Maximum Daily and Annual Operational Emissions of Criteria Air Pollutants and Precursors

Emissions Source	ROG (lbs/day)	NO_X (lbs/day)	PM_{10} [1] (lbs/day)	$PM_{2.5}$ [1] (lbs/day)	PM_{10} [1] (tons/year)	$PM_{2.5}$ [1] (tons/year)
Emissions	**0.13**	**0.07**	**0.08**	**0.02**	**0.01**	**<0.01**
SMAQMD Threshold of Significance	65	65	80	82	14.6	15
Threshold Exceeded?	N/A	No	No	No	No	No

Notes:
BMP = best management practices; lbs/day = pounds per day; N/A = not applicable; NO_X = nitrogen oxides; PM = particulate matter; PM_{10} = particulate matter less than 10 micrometers in diameter; $PM_{2.5}$ = particulate matter less than 2.5 micrometers in diameter; ROG = reactive organic gases; SMAQMD = Sacramento Metropolitan Air Quality Management District; tons/year = tons per year
[1] This analysis utilized the non-zero SMAQMD recommended PM significance threshold; therefore, implementation of BMPs is required.
Source: See Appendix ALT-2 for detailed construction assumptions and calculations.

Since Alternative 1 would generate PM emissions during operation, implementation of best management practices mitigation measures would be required in order to use the SMAQMD non-zero thresholds of significance. As a condition of the building permit, the project applicant would be required to implement best management practices for fugitive dust control during operational and maintenance activities associated with Alternative 1 to reduce operational particulate matter emissions. Mitigation Measure AQ-2f (Implement Best Management Practices for Reducing Operational PM Emissions) is detailed in Chapter 5. Because this mitigation measure would reduce operational particulate matter emissions, and the resulting impact after mitigation would be **less than significant with mitigation**.

IMPACT ALT-AQ-3: EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS

TAC EMISSIONS – CONSTRUCTION AND DECOMMISSIONING

Alternative 1 would result in lower off-site exhaust PM, including diesel particulate matter (DPM), emissions compared to the proposed project because Alternative 1 does not require off-site material export. Alternative 1 would avoid the 9,750 heavy-duty diesel truck trips required by the proposed project.

The same analysis of this impact generally applied to the proposed project in Chapter 5, "Air Quality", would also apply to Alternative 1. Similar to the proposed project, construction would vary in activity and equipment intensity over that time and would take place throughout the approximately 372-acre Alternative 1 site, thereby limiting the amount of time that emitting equipment would be along the Alternative 1 site perimeters, closest to off-site residences. As discussed above, under Impact ALT-AQ-2, Mitigation Measure AQ-2b would also be required under Alternative 1 – a mitigation measure that would require off-road diesel-powered equipment with engines greater than 50 horsepower to be rated Tier 4 Final (a newer and cleaner rating for equipment). Thus, on-site emissions of exhaust PM would be reduced, which would result in a proportional reduction in DPM emissions and exposure of nearby residences to DPM. Construction and decommissioning activities under Alternative 1 would also be required to comply with all applicable SMAQMD rules and regulations and the California Air Resources Board Airborne Toxics Control Measures, including idling restrictions. Due to the intermittent and temporary nature of construction and decommissioning activities at any given location and the dispersive properties of Toxic Air Contaminants (TACs), temporary construction and decommissioning activities associated with Alternative 1 would not expose sensitive receptors to DPM emission levels that would result in a health hazard. As a result, this impact would be **less than significant**.

TAC EMISSIONS – OPERATIONS

Similar to the proposed project, the majority of operational emissions associated with Alternative 1 would be generated by vehicle travel occurring off-site from light-duty vehicles trips by staff to and from the Alternative 1 site and would generally not be proximate to the Alternative 1 site perimeter and nearby residences. Light-duty vehicles are not substantial sources of TAC emissions (e.g., diesel PM), which are primarily associated with diesel-fueled vehicles. Therefore, operational emissions would not be

considered a substantial source of TACs and this impact related to operational TAC emissions would be **less than significant**.

CRITERIA AIR POLLUTANT EMISSIONS

Consistent with the analysis for the proposed project discussed in Impact AQ-3 in Chapter 5, construction of Alternative 1 does not contribute to significant material regional health effects from the emissions of criteria air pollutants and precursors. Therefore, this impact is **less than significant**.

IMPACT ALT-AQ-4: RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE

Consistent with the analysis for the proposed project discussed in Impact AQ-4 in Chapter 5, Alternative 1 would use typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Unlike the proposed project, Alternative 1 would not require off-site disposal of grading materials and would therefore result in 9,750 fewer heavy-duty diesel truck trips than the proposed project. Similar to the proposed project, operation of Alternative 1 would not add any new sources of odors.

Alternative 1 would continue to utilize land for agricultural activities, which may consist of grazing operations. As such, potential emissions, such as those leading to odors, from the agricultural activities, would remain similar to existing conditions. Alternative 1 does not propose odor-generating land uses, such as composting facilities, wastewater treatment plants, or rendering plants. As a result, Alternative 1 would not result in other emissions, such as those leading to odors above existing conditions or have adverse effects on a substantial number of people. This impact would be **less than significant**.

BIOLOGICAL RESOURCES

Due to additional refined engineering and design, there are differences in the granularity of data between the proposed project and Alternative 1. It is likely that there would be fewer impacts to aquatic resources under Alternative 1 compared to the proposed project. However, for consistency with the proposed project analysis, Alternative 1 was assessed by using a worst-case scenario where all impacts within the fenced boundary of the facility would be considered permanent impacts, similar to the proposed project. As such, this chapter assumes a conservative worst-case analysis for aquatic resource impacts. Even under this conservative worst-case scenario, Alternative 1 would result in fewer total impacts to aquatic resources than the proposed project. While the final impact acreages would ultimately be determined during the project permitting process, the total maximum potential permanent impacts on wetlands (and other waters) resulting from the proposed project and Alternative 1 are identified in Table ALT-7.

NO PROJECT ALTERNATIVE

Under the No Project alternative, the existing conditions would remain unchanged and agricultural activities, including year round cattle grazing, at the project site would continue. The potentially significant impacts identified for the proposed project on special-status species, sensitive communities (including aquatic environments), wildlife

movement, and consistency with local ordinances would not occur. Therefore, impacts related to biological resources would be reduced when compared with those of the proposed project.

Alternative 1

The same environmental setting and regulatory setting described in Chapter 6, "Biological Resources", apply to Alternative 1, except for a reduced Alternative 1 site of approximately 372 acres, compared to 380 acres for the proposed project. Table ALT-6 summarizes the acres of each vegetation, land cover, and aquatic feature type within the Alternative 1 site. The description of biological resources information and analysis presented in this section is based primarily on the alternative site plan-specific final Biological Technical Report, Aquatic Resources Delineation Report, and SSHCP Consistency Analysis (dated July 2022) prepared by Dudek (Appendix ALT-3), from which data were verified by AECOM; in some cases, acreages were re-calculated to support the analysis in this document. As with the proposed project, no trees protected by the Sacramento County General Plan Policy CO-138 are located within or adjacent to the Alternative 1 site.

Table ALT-6: Vegetation and Land Cover in the Sloughhouse Solar Alternative 1 Site and Study Area

Vegetation Community/ Land Cover Type	Vegetation/Cover Type Description	Alternative 1 Site (Acres)	Adjacent Lands within Alternative 1 Study Area (Acres)	Alternative 1 Study Area[1] (Total Acres)
Non-Aquatic Cover Types				
Annual Grassland[2]	Characterized by annual, nonnative grasses and forbs; lacks a shrub and tree layer. Dominant species include soft brome (*Bromus hordeaceus*), Medusa head (*Elymus caput-medusae*), and narrow tarweed (*Holocarpha virgata*). Cattle grazing apparent throughout; however, areas north of the central access road appeared overgrown, weedy, and ungrazed during the January 2022 site visit. Numerous aquatic resource features are present throughout this cover type.	357.23	183.94	541.17
Low Density Development	Primarily located in the northeastern portion of the study area and project site, adjacent to agricultural lands. Consist of relatively sparsely constructed environments, including residences and associated structures, farm buildings, and small rural neighborhoods with large lot sizes.	6.84	15.02	21.86
Urban	County roadways.	1.80	2.37	4.17
Agricultural	Present east of the Cosumnes River riparian corridor and outside the project site. Land use dominated by farming and other agricultural production, including hay and alfalfa pastures,	0.0	85.45	85.45

Vegetation Community/ Land Cover Type	Vegetation/Cover Type Description	Alternative 1 Site (Acres)	Adjacent Lands within Alternative 1 Study Area (Acres)	Alternative 1 Study Area[1] (Total Acres)
	row crops and other croplands. Production practices include flood-irrigation and cultivation followed by harvesting and discing. After discing, some fields appear to remain fallow for short periods of time, allowing for establishment of annual and biennial native and non-native annual grasses and broad-leaved plants, including many non-native species.			
Mixed Riparian Woodland	Present along the Cosumnes River corridor. Intergrades with Valley Grassland along streams and agricultural fields. Vegetation includes various oak species (*Quercus* spp.), elderberry (*Sambucus* spp.), and sparse to dense ground cover.	0.0	1.60	1.60
Valley Foothill Riparian	Present along the Cosumnes River corridor. Similar to Mixed Riparian Woodland.	0.0	8.81	8.81
Aquatic Cover Types				
Ephemeral Drainage	Consist of stream channels that are naturally occurring rather than human created and contain flowing water during and briefly after precipitation events. Hydrology depends on inputs during rain events and runoff from the surrounding uplands. There are no continuous riparian corridors associated with these features.	0.74	0.37	1.11
Intermittent Drainage	Generally, with flowing water during certain times of the year, when groundwater provides water for stream flow, and receive supplemental water from rainfall runoff. The intermittent drainage on site appears to receive water via a culvert from a basin complex located north of the study area. This drainage receives water from two adjacent seasonal wetland swales, contains three seasonal wetlands within low points or widenings, and terminates into a pond.	0.46	1.90	2.36
Seasonal Wetland Swale	Consist of topographic depressions that would be expected to convey water when inundated, but where a defined bed and bank and typical fluvial indicators are lacking.	0.70	1.40	2.10
Upland Swale	Consist of linear topographic depressions that lack a distinct ordinary high water mark.	0.08	0.54	0.62
Pond	Natural closed depressions that have been artificially augmented by perennial water	0.37	3.91	4.28

Vegetation Community/ Land Cover Type	Vegetation/Cover Type Description	Alternative 1 Site (Acres)	Adjacent Lands within Alternative 1 Study Area (Acres)	Alternative 1 Study Area[1] (Total Acres)
	sources, generally for the purpose of supporting livestock.			
Seasonal Wetland	Appear to be inundated seasonally; some are connected via seasonal wetland swales, ephemeral drainages, and/or intermittent drainages. Characterized by a distinct change in vegetation type and cover from the surrounding grassland. Small mammal burrows were observed within several of the features, indicating that these features remained dry for a long enough period for subterranean animals to inhabit them.	3.09	11.06	14.15
Vernal Pool	Characterized as three-parameter wetlands with an impermeable layer such as a hard pan that may fill and empty several times during the rainy season. These features may be isolated or connected to larger vernal complexes via swales or subsurface flows. The vernal pools on site exhibited concentric rings of distinctly different vegetation cover and species composition.	0.25	6.05	6.30
Ditch	These are earthen ditches; human-made features with intermittent hydrology intended for runoff from stormwater, agricultural uses, irrigation, or similar purposes. There are no continuous riparian corridors associated with these features.	0.15	1.78	1.93
Perennial Drainage (Cosumnes River)	Includes the Cosumnes River and its associated riparian corridor, a known jurisdictional water with perennial flows that originates in the Sierra Nevada mountains and flows approximately 50 miles into the Central Valley, emptying into the Mokelumne River in the Sacramento San Joaquin Delta.	0	21.75	21.75
Freshwater Emergent Wetland	This feature has developed because of artificial irrigation and would likely convert to upland vegetation if the leakage was repaired.	0	0.02	0.02
Total		**371.7**	**346.0**	**717.7**

Source: Appendix ALT-3, adapted by AECOM in 2022.
Notes:

[1] The "Study Area" defined in Appendix ALT-3 is a total of 732 acres, which is based on the pre-2020 Sacramento County Assessor's Office effort to update and revise parcel delineation boundaries throughout the County. The "Study Area" described in this document is a total of 718 acres and reflects current (2023) Sacramento County Assessor's Office parcel delineations.

[2] Includes areas of Valley grassland and California annual grassland (Appendix ALT-3).

Source: Appendix ALT-3, adapted by AECOM in 2022.

Table ALT-7 identifies the permanent and temporary impacts to vegetation communities and land cover types from Alternative 1, consistent with Plate ALT-4.

Table ALT-7: Summary of Anticipated Impacts of the Proposed Project and Alternative 1 on Vegetation Communities/Land Cover Types

Vegetation Community/ Land Cover Type[1]	Anticipated Impact – Proposed Project			Anticipated Impact – Alternative 1		
	Permanent Impact (Acres)	Temporary Impact (Acres)	No Impact- Existing Roadway (Acres)	Permanent Impact (Acres)	Temporary Impact (Acres)	No Impact - Existing Roadway (Acres)
Upland Cover Types						
Annual Grassland	353.02	8.47	0	352.90	4.33	0
Low Density Development	11.28	0	0	6.84	0	0
Urban	1.52	0	0.24	1.57	0	0.24
Subtotal—Upland Cover Types	***365.81***	***8.47***	***0.24***	***361.31***	***4.33***	***0.24***
Aquatic Cover Types						
Ditch	0.12	0	0.04	0.12	0	0.04
Ephemeral Drainage	0.73	0	0	0.74	0	0
Intermittent Drainage	0.46	0	0	0.46	0	0
Seasonal Wetland Swale	0.70	0	0	0.70	0	0
Upland Swale	0.08	0	0	0.08	0	0
Pond	0.37	0	0	0.37	0	0
Seasonal Wetland	2.97	0.18	0	2.97	0.12	0
Vernal Pool	0.25	0	0	0.25	0	0
Subtotal—Aquatic Cover Types	***5.69***	***0.18***	***0.04***	***5.69***	***0.12***	***0.04***
Total	**371.51**	**8.65**	***0.27***	***367.00***	***4.45***	***0.27***

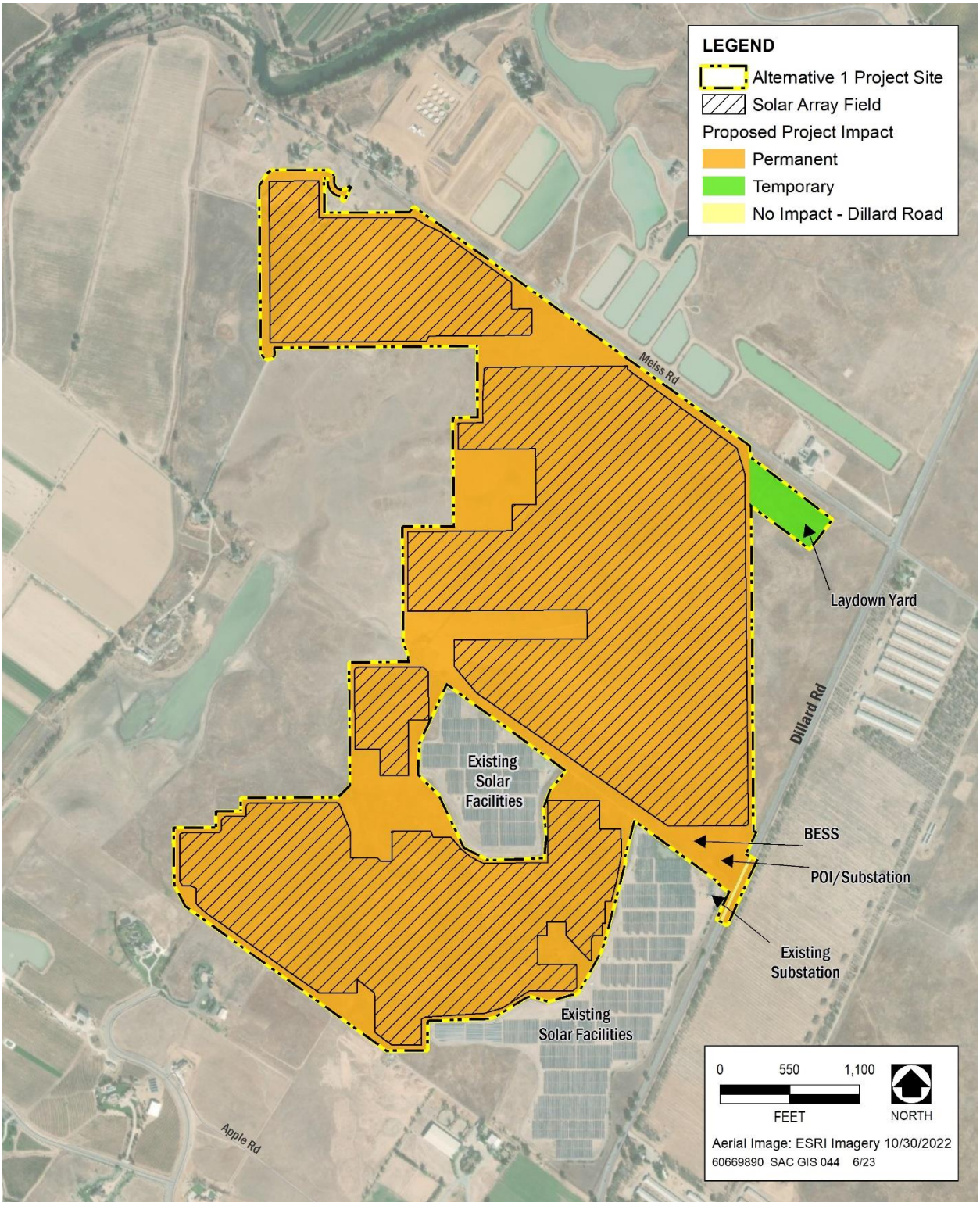
Sources: D.E. Shaw (pers comm, 2023), Compiled by AECOM

Notes:

[1] Upland Types based on the vegetation community and land cover classification system used in the Fire and Resource Assessment Program (FRAP) dataset (California Department of Forestry and Fire Protection 2019). Aquatic Cover Types based on a site-specific wetland delineation conducted by Dudek (see Appendix BR-2 and Appendix ALT-3).

[2] Permanent impact acreages presented in this table assume that the full extent of the area within the proposed facility fenceline, except temporary construction yards, and including access roads (see Plate ALT-4) would be a direct permanent impact – this is a conservative assumption that is likely to overestimate the actual impacts. While solar panels would create permanent overhead cover along rows of solar arrays within the solar field arrays, much of the existing vegetation beneath the panels and between the solar rows and blocks would remain unaffected or be restored after project construction.

Plate ALT-4. Alternative 1 Impact Footprint



Source: Dudek 2022, Compiled by AECOM 2023

IMPACT ALT-BR-1: 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 CDFW OR USFWS

As with the proposed project, ground-disturbing activities during construction of Alternative 1 (including farmstead demolition) would result in the temporary and permanent removal of, or degradation (e.g., through erosion or sedimentation) to habitats that are potentially suitable for and/or known to be occupied by special-status plants and wildlife. Refinements to the design were intended to reduce impacts compared to the proposed project. Noise, vibrations, visual or physical disturbances, and fugitive dust generated during construction or operations could harm or kill special-status plants and wildlife or cause special-status wildlife to abandon essential life history functions (e.g., breeding sites) within or adjacent to the Alternative 1 site. Accidental spills/leaks from construction- or operations-related equipment use could expose special-status plants and wildlife to harmful pollutants. Construction vehicles and equipment used during construction and operations could introduce weeds that degrade wildlife habitat or compete with special-status plants. Operation of electrical infrastructure (e.g., overhead powerlines, transformers, substation) could cause injury or mortality of special-status wildlife from collision or electrocution. Trash and material stockpiles generated during construction and water use during construction, operations, and maintenance activities (e.g., dust control, washing solar modules) could attract wildlife into harm's way or attract predators that harm special-status wildlife. Decommissioning activities would have a short-term adverse impact on special-status species that continue to use the Alternative 1 site during operations, but the decommissioning of the site is likely to have a long-term beneficial impact on special-status species, in particular grassland-associated species. Depending on the level of restoration achievable on-site, wetland-associated species may also benefit from decommissioning. Species-specific details regarding Alternative 1 impacts are described in the sections that follow. Alternative 1 impacts on special-status species resulting from project construction, operations and maintenance activities, and decommissioning would be **potentially significant**.

Mitigation Measure BR-1a (Construction Best Management Practices) would be required during construction and decommissioning of Alternative 1, similar to the proposed project. With the implementation of this mitigation measure, general construction-related impacts on special-status plants and wildlife would be **less than significant with mitigation**.

As with the proposed project, Alternative 1 has the potential to impact up to 13 special-status plants that could occur on the Alternative 1 site (see Table BR-3 in Chapter 6) in similar ways as described for the proposed project under Impact BR-1. Additionally, Alternative 1 has potential to impact special-status wildlife as described for the proposed project under Impact BR-1, except as identified specifically for each species or species group below.

CALIFORNIA TIGER SALAMANDER AND WESTERN SPADEFOOT

The impacts to the California tiger salamander and western spadefoot described under Impact BR-1 for the proposed project in Chapter 6, "Biological Resources", would be

similar to the Alternative 1 impacts. When compared to the proposed project, Alternative 1 would have a similar permanent impact on vernal pools and other seasonal aquatic habitats (low potential breeding habitat) and a slightly reduced temporary impact on these potential aquatic habitats for these species (see Table ALT-9). Similarly, when compared to the proposed project, Alternative 1 would have a similar permanent impact on annual grasslands (upland habitat), but a decreased temporary impact. This is because of the slightly reduced and reconfigured footprint of the Alternative 1 site.

Mitigation Measure BR-1c would be required during construction, operation, and decommissioning of Alternative 1, as it would be required for the proposed project. With the implementation of this mitigation measure, impacts on California tiger salamander and western spadefoot would be **less than significant with mitigation**.

NORTHWESTERN POND TURTLE

Alternative 1 would have similar impacts on the northwestern pond turtle compared to the proposed project, as described under Impact BR-1.

Mitigation Measure BR-1d would be required during construction, operation, and decommissioning of Alternative 1, as it would be required for the proposed project. With the implementation of this mitigation measure, impacts on northwestern pond turtles would be **less than significant with mitigation**.

BURROWING OWL

Alternative 1 would have similar impacts on burrowing owls compared the proposed project, as described under Impact BR-1. When compared to the proposed project, Alternative 1 would have a similar permanent impact on annual grasslands that are suitable for burrowing owls, but a decreased temporary impact on annual grasslands (see Table ALT-7).

Mitigation Measure BR-1e would be required during construction, operation, and decommissioning of Alternative 1, as it would be required for the proposed project. With the implementation of this mitigation measure, impacts on burrowing owls would be **less than significant with mitigation**.

SWAINSON'S HAWK

NESTING HABITAT

Alternative 1 would have similar impacts on Swainson's hawk nesting habitat as described for the proposed project under Impact BR-1. As with the proposed project, Alterative 1 activities would not remove any known or potential Swainson's hawk nest trees; however, a potential nest site is located approximately 500 feet northeast of the Alternative 1 site. If an active Swainson's hawk nest site becomes established within 0.5 mile from the construction footprint, construction activities during the nesting period could have similar impacts on Swainson's hawk nesting as described under Impact BR-1.

FORAGING HABITAT

Alternative 1 would have similar impacts on Swainson's hawk foraging habitat as described for the proposed project under Impact BR-1, except for a few key differences listed below. Alternative 1 would permanently impact a similar amount of grassland foraging habitat (352.90 acres) than the proposed project (353.02 acres). However, the temporary impacts to grassland foraging habitat under Alternative 1 would be less (4.33 acres) than the proposed project (8.47 acres). These differences are the result of the slightly reduced and reconfigured Alternative 1 site footprint.

Similar to the proposed project, the implementation of an Agricultural Management Plan (Mitigation Measure AL-1, described in Chapter 4, "Agricultural Resources and Land Use") would be required for Alternative 1. The Agricultural Management Plan would be expected to restore and maintain function to temporary impact areas as grassland foraging habitat for Swainson's hawk after project construction and throughout the operational life of the proposed solar facility.

As with the proposed project, Alternative 1 is located in the SSHCP PPU 5. Construction of Alternative 1 would result in the permanent loss of 352.90 acres of grasslands and this would represent approximately one percent of the 32,129 acres of modeled Swainson's Hawk foraging habitat present within PPU 5.

Because the Alternative 1 site is within 0.5 mile of a potential Swainson's hawk nest site and within 10 miles of over 50 historic nest locations, any permanent loss of grassland foraging habitat would be considered significant and would require compensatory mitigation consistent with the County's Swainson's Hawk Ordinance (described in more detail in Chapter 6, "Biological Resources"). The Swainson's Hawk Ordinance requires that permanent impacts for land use category AG-20 (i.e., land use category associated with the Alternative 1 site) be compensated for at 75 percent value. Therefore, a total of 264.68 acres of compensation would be required for the loss of 352.90 acres of grassland from Alternative 1. Because the required compensation for Alternative 1 is more than 40 acres, compensation must be accomplished by providing mitigation lands as described in Mitigation Measure BR-1f.

Mitigation Measure BR-1f would be required during construction, operation, and decommissioning of Alternative 1, as it would be required for the proposed project. With the implementation of this mitigation measure, impacts on Swainson's hawks would be **less than significant with mitigation**.

TRICOLORED BLACKBIRD

Alternative 1 would have similar impacts on the tricolored blackbird compared to the proposed project, as described under Impact BR-1.

Mitigation Measure BR-1g would be required during construction, operation, and decommissioning of Alternative 1, as it would be required for the proposed project. With the implementation of this mitigation measure, impacts on Tricolored Blackbirds would be **less than significant with mitigation**.

VALLEY ELDERBERRY LONGHORN BEETLE

Alternative 1 would have similar impacts on valley elderberry longhorn beetle compared to the proposed project, as described under Impact BR-1. However, as shown in Table ALT-8, Alternative 1 would impact fewer shrubs that are potentially and/or likely occupied (i.e., with relict bore/exit holes) by this species compared to the proposed project.

Table ALT-8: Summary of Anticipated Impacts of the Proposed Project and Alternative 1 on Valley Elderberry Longhorn Beetle

Shrub ID	Habitat Context	Located within 165 Feet from Ground-Disturbing Activities	Survey Result	Anticipated Impact—Proposed Project[1]	Anticipated Impact—Alternative 1
1 [2]	Riparian	No	No presence observed	No Impact	No Impact
2 [2]	Non-riparian	No	Relict bore/exit holes, no presence observed	No Impact	No Impact
3 [2]	Riparian	No	No presence observed	No Impact	No Impact
4 [2,3]	Non-riparian	***Yes***	No presence observed	Direct	Direct
5	Non-riparian	No	No presence observed	No Impact	No Impact
6 [3]	Non-riparian	***Yes***	No presence observed	Indirect	Indirect
7	Riparian	No	Relict bore/exit holes, no presence observed	No Impact	No Impact
8	Non-riparian	***Yes***	***Relict bore/exit holes, no presence observed***	Indirect	No Impact
9	Non-riparian	***Yes***	No presence observed	Indirect	No Impact
10	Non-riparian	***Yes***	No presence observed	Indirect	No Impact
11	Non-riparian	***Yes***	No presence observed	Indirect	No Impact
12	Non-riparian	***Yes***	***Relict bore/exit holes, no presence observed***	Direct	No Impact
13	Non-riparian	***Yes***	No presence observed	Direct	Direct

Notes:

1 Anticipated Impact Type
Direct: permanent physical damage or loss of the shrub is likely, such as from clearing and grading associated with project implemented.
Indirect: Reasonably foreseeable effect from project implementation on adjacent shrubs outside the direct disturbance footprint.
No Impact: Shrub will not be affected directly or indirectly from project actions; shrub is greater than 165 feet from any project-related disturbance.

2 Cluster of more than one elderberry shrub in on location.

3 Shrub in poor condition; highly degraded by cattle use. Provide little to no habitat value for valley elderberry longhorn beetle

Mitigation Measure BR-1h would be required during construction, operation, and decommissioning of Alternative 1, as it would be required for the proposed project. With the implementation of this mitigation measure, impacts on valley elderberry longhorn beetles would be **less than significant with mitigation**.

SPECIAL-STATUS AQUATIC INVERTEBRATES

Alternative 1 would have similar impacts on special-status aquatic invertebrates compared to the proposed project, as described under Impact BR-1, except for a few key differences. Alternative 1 would permanently impact a similar amount of suitable aquatic habitat (i.e., seasonally inundated habitats: all aquatic types except for pond) (5.32 acres) compared to the proposed project (5.32 acres); and would have slightly reduced temporary impacts on suitable aquatic habitat (0.12 acre) compared to the proposed project (0.18 acre) (see Table ALT-7).

Table ALT-9: Summary of Anticipated Impacts of the Proposed Project and Alternative 1 on Wetlands and other Waters

Wetlands and other Waters Impact Type	Proposed Project	Alternative 1
Permanent	5.69	5.69
Temporary	0.18	0.12
Total	**5.87**	**5.81**

Mitigation Measure BR-1i would be required during construction, operation, and decommissioning of Alternative 1, as it would be required for the proposed project. With the implementation of this mitigation measure, impacts on special-status aquatic invertebrates would be **less than significant with mitigation**.

AMERICAN BADGER

Alternative 1 would have similar impacts on the American badger as the proposed project, described under Impact BR-1.

Mitigation Measure BR-1j would be required during construction, operation, and decommissioning of Alternative 1, as it would be required for the proposed project. With the implementation of this mitigation measure, impacts on American Badgers would be **less than significant with mitigation**.

BATS

Alternative 1 would have similar impacts on bat roosts as the proposed project, as described under Impact BR-1.

Mitigation Measure BR-1k would be required during construction, operation, and decommissioning of Alternative 1, as it would be required for the proposed project. With the implementation of this mitigation measure, impacts on bats would be **less than significant with mitigation**.

OTHER NESTING RAPTORS AND MIGRATORY BIRDS (INCLUDING NORTHERN HARRIER, LOGGERHEAD SHRIKE, WHITE-TAILED KITE, AND GRASSHOPPER SPARROW)

Alternative 1 would have similar impacts on other nesting raptors and migratory birds as the proposed project, as described under Impact BR-1.

Mitigation Measure BR-1l would be required during construction, operation, and decommissioning of Alternative 1, as it would be required for the proposed project. With the implementation of this mitigation measure, impacts on other nesting raptors and migratory birds would be **less than significant with mitigation**.

CROTCH'S BUMBLE BEE

Alternative 1 would have similar impacts on Crotch's bumble bee as the proposed project, as described under Impact BR-1.

Mitigation Measure BR-1m would be required during construction, operation, and decommissioning of Alternative 1, as it would be required for the proposed project. With the implementation of this mitigation measure, impacts on Crotch's bumble bee would be **less than significant with mitigation**.

SIGNIFICANCE AFTER MITIGATION

Mitigation Measures BR-1a through BR-1m would be required during construction, operation, and decommissioning of Alternative 1, as would be required for the proposed project to avoid and minimize impact on special-status plants and wildlife. With the implementation of these mitigation measures, impacts on special-status plants and wildlife would be **less than significant with mitigation**.

IMPACT ALT-BR-2: HAVE A SUBSTANTIAL ADVERSE EFFECT ON ANY RIPARIAN HABITAT OR OTHER SENSITIVE NATURAL COMMUNITY IDENTIFIED IN LOCAL OR REGIONAL PLANS, POLICIES, OR REGULATIONS, OR BY CDFW OR USFWS

Alternative 1 would impact the same sensitive natural communities as the proposed project, as described under Impact BR-1: vernal pools that resemble Northern hardpan vernal pool habitat; grassland bird habitat; and potentially jurisdictional waters of the U.S. and of the State. However, the extent of some impacts would differ, as identified below.

As with the proposed project, riparian habitat and essential fish habitat (Central Valley steelhead/Chinook salmon) would not be impacted by Alternative 1 because these sensitive communities are located more than 200 feet north of the Alternative 1 site disturbance footprint. Standard construction BMPs required by Mitigation BR-1a would be implemented to avoid and minimize off-site, project-related impacts.

Alternative 1 would result in a similar permanent loss of (i.e., fill and removal of) and temporary impacts (i.e., no temporary impacts) to vernal pools compared to the proposed project (see Table ALT-7 for project-related impacts on vernal pools from the proposed project and Alternative 1, respectively). Impacts to other potentially jurisdictional waters of the U.S. and of the State from implementation of Alternative 1 are addressed under Impact ALT-BR-3, below.

As described under Impact ALT-BR-1 for Swainson's hawk, Alternative 1 would have a similar permanent impact but reduced temporary impacts on Swainson's hawk foraging habitat (i.e., annual grasslands that also support grassland bird communities) compared to the proposed project, primarily from the refinement of the site plan and slightly reduced Alternative 1 footprint.

As with the proposed project, the impact of Alternative 1 on sensitive natural communities would be **potentially significant.** To reduce impacts on sensitive natural communities to **less than significant with mitigation**, Mitigation Measures BR-1a, BR-1f, and BR-3, as described in Chapter 6, "Biological Resources" would be required for Alternative 1.

IMPACT ALT-BR-3: HAVE A SUBSTANTIAL ADVERSE EFFECT ON STATE OR FEDERALLY PROTECTED WETLANDS (INCLUDING, BUT NOT LIMITED TO, MARSH, VERNAL POOL, COASTAL) THROUGH DIRECT REMOVAL, FILLING, HYDROLOGICAL INTERRUPTION, OR OTHER MEANS

The same analysis of this impact applied to the proposed project in Chapter 6, "Biological Resources", would also apply to Alternative 1. Alternative 1 could result in similar permanent impacts on state and potentially federally protected wetlands and other waters (i.e., all aquatic resources identified) compared to that described for the proposed project under Impact BR-3; temporary impacts for Alternative 1 would be slightly reduced compared to the proposed project (see Table ALT-7). The potential for indirect impacts on state or federally protected wetlands (and other waters) would be similar to that described for the proposed project; implementation of construction best management practices, the project stormwater pollution and prevention plan, and other permits required by existing regulations (see Chapter 9, Impact HWQ-3), would largely prevent sedimentation, runoff, and pollutant related impacts to wetlands and other waters adjacent to the Alternative 1 footprint.

Any impact on potential state- or federally-protected wetlands would be considered significant. As with the proposed project, the impact of Alternative 1 on wetlands and other waters would be **potentially significant.** To reduce impacts on state and federally protected wetlands and other waters to **less than significant with mitigation**, Mitigation Measure BR-3 would be required for Alternative 1.

IMPACT ALT-BR-4: INTERFERE SUBSTANTIALLY WITH THE MOVEMENT OF ANY NATIVE RESIDENT OR MIGRATORY FISH OR WILDLIFE SPECIES OR WITH ESTABLISHED NATIVE RESIDENT OR MIGRATORY WILDLIFE CORRIDORS, OR IMPEDE THE USE OF NATIVE WILDLIFE NURSERY SITES

The same analysis of this impact applied to the proposed project in Impact BR-4, Chapter 6, Biological Resources, would also apply to Alternative 1.

Similar to the proposed project, without implementation of Mitigation Measures BR-1e, BR-1f and BR-3, this impact would be **potentially significant**. To reduce impacts on wildlife movement, movement corridors and wildlife nursery sites to **less than significant with mitigation**, Mitigation Measures AL-1, BR-1e, BR-1f, and BR-3 would be required as part of Alternative 1.

IMPACT ALT-BR-5: CONFLICT WITH ANY LOCAL POLICIES OR ORDINANCES PROTECTING BIOLOGICAL RESOURCES, SUCH AS A TREE PRESERVATION POLICY OR ORDINANCE

Alternative 1 would potentially conflict with the County Swainson's Hawk Ordinance as described for the proposed project under Impact BR-5 if Mitigation Measure BR-1f is not implemented for the permanent loss of Swainson's Hawk foraging habitat. As with the proposed project, this impact would be **potentially significant**. To maintain consistency

with the County Swainson's Hawk Ordinance, Mitigation Measure BR-1f would be required as part of Alternative 1.

IMPACT ALT-BR-6: CONFLICT WITH THE PROVISIONS OF AN ADOPTED HCP, NATURAL COMMUNITY CONSERVATION PLAN, OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HCP

As with the proposed project, Alternative 1 would be consistent with the provisions of the adopted SSHCP as described under Impact BR-6 because the County would require implementation of the same mitigation measures as identified for the proposed project, which are consistent with all relevant general and Covered Species AMMs from the SSHCP. Alternative 1 impacts on natural land covers and covered species modeled habitat would be slightly different from those reported for the proposed project; however, at the scale of the SSHCP Plan Area these differences would be negligible. Therefore, as with the proposed project, the potential conflict of Alternative 1 with provisions of the SSHCP would be **less than significant**.

CLIMATE CHANGE

NO PROJECT ALTERNATIVE

Under the No Project alternative, the existing conditions would remain unchanged and agricultural activities, including year-round cattle grazing, at the project site would continue. The potentially significant impacts identified for the proposed project related to the potential for the project to generate construction-related GHG emissions that may have a cumulatively significant impact on the environment would not occur. Therefore, construction-related impacts related to climate change would be reduced when compared to those of the proposed project. However, the No Project alternative would not result in a GHG-free energy resource and would not increase SMUD's renewable energy supply. Overall, the No Project alternative would not provide the potential reduction in GHG emissions associated with electricity production under the proposed project's solar energy facilities instead of electricity generated by fossil-fuel sources, as described in Chapter 7, "Climate Change".

ALTERNATIVE 1

The same environmental setting and regulatory setting described in Chapter 7, "Climate Change", apply to Alternative 1.

IMPACT ALT-CC-1: GENERATE GREENHOUSE GAS EMISSIONS, EITHER DIRECTLY OR INDIRECTLY, THAT MAY HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT

CONSTRUCTION AND DECOMMISSIONING

Since Alternative 1 does not require off-site material export, Alternative 1 would result in lower total construction-related GHG emissions than the proposed project (approximately 1,532 MT CO_2e less). Construction of Alternative 1 would generate approximately 1,958 MT CO_2e over the construction period and would exceed the SMAQMD construction-related threshold of 1,100 MT CO_2e per year. Decommissioning activities would generate approximately 989 MT CO_2e and would not exceed the SMAQMD threshold of 1,100 MT CO_2e per year.

As with the proposed project, Alternative 1 would be required to implement of best management practices during construction activities to reduce GHG emission impacts as a part of Alternative 1. Mitigation Measure CC-1 (Implement Construction GHG Emission Best Management Practices During Construction Activities) is detailed in Chapter 7. Alternative 1 would contribute GHG-free energy resource and provide a GHG emissions benefit of up to 19,459 MT CO_2e in the first year of operation, which would offset the construction and decommissioning GHG emissions. However, since Alternative 1 does not involve off-site material export, Alternative 1 would result in a reduction in construction-related GHG impacts compared to the proposed project. In addition, Mitigation Measure CC-1 would further reduce the potential GHG emission impacts during construction and decommissioning; the resulting impact after mitigation would be **less than cumulatively considerable with mitigation**.

OPERATIONS

Annual operational GHG emissions under Alternative 1 would be less than the annual emissions under the proposed project. Therefore, similar to the proposed project, these operational GHG emissions would be less than the SMAQMD *de minimis* screening level and operational emissions under Alternative 1 would not be considered to have a cumulatively considerable contribution to the significant impact of global climate change. In addition, Alternative 1 would not include any natural gas infrastructure, and would therefore, be consistent with SMAQMD Best Management Practice 1. Furthermore, Alternative 1 is not a typical land use development that would be required to comply with CALGreen requirements, such as commercial and residential land use developments, and SMAQMD Best Management Practice 2 would not be applicable. Therefore, this impact for operations would be **less than cumulatively considerable.**

IMPACT ALT-CC-2: CONFLICT WITH AN APPLICABLE PLAN, POLICY OR REGULATION ADOPTED FOR THE PURPOSE OF REDUCING THE EMISSIONS OF GREENHOUSE GASES

Alternative 1 would contribute to attainment of near-term regional and state GHG reduction targets by providing potential GHG reductions each year of operation if the electricity generated by the project's solar energy facilities were to be used instead of electricity generated by fossil-fuel sources. Thus, Alternative 1 would be consistent with and supports state and regional regulatory policies and regulations including the Renewables Portfolio Standard, Senate Bill 100, and would help the state reach its goal to be carbon neutral by 2045 as required by AB 1279. Alternative 1 would also contribute toward the County's General Plan and Final Draft Climate Action Plan goals of reducing the reliance on non-renewable energy sources and supporting the development and use of renewable sources of energy, including, but not limited to, solar. As with the proposed project, Alternative 1 would be required comply with all applicable regulations, including California Code of Regulations Title 17 CCR Section 95350 et seq. for reducing GHG emissions from gas-insulated equipment, such as switchgears used in solar power generation facilities like the proposed project. In addition, Alternative 1 building construction and design would comply with California's Building Energy Efficiency Standards, which are designed to reduce wasteful and unnecessary energy consumption in newly constructed buildings. The 2022 Building Energy Efficiency Standards, which were adopted on August 11, 2021, and became effective January 1, 2023, include

prescriptive requirements for cool roofs and increased solar reflectance (CEC 2022), which also help reduce the urban heat island effect (EPA 2008). In addition, ground-based solar photovoltaic development is identified as an urban heat mitigation measure with local cooling benefits within the SMAQMD's Capital Region Urban Heat Island Mitigation Project (SMAQMD 2020). Therefore, Alternative 1 would be consistent with and would not conflict with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of greenhouse gases. This impact would be **less than cumulatively considerable.**

CULTURAL AND PALEONTOLOGICAL RESOURCES

NO PROJECT ALTERNATIVE

Under the No Project alternative, the existing conditions would remain unchanged and agricultural activities, including year-round cattle grazing, at the project site would continue. The potentially significant impacts identified for the proposed project related to encountering and impacting unknown archaeological resources, human remains, or unique paleontological resources would not occur. Therefore, impacts related to cultural and paleontological resources would be reduced when compared to those of the proposed project.

ALTERNATIVE 1

The same environmental setting and regulatory setting described in Chapter 8, "Cultural and Paleontological Resources", apply to Alternative 1, except for a reduced project site of approximately 372 acres, compared to 380 for the proposed project. Refer to

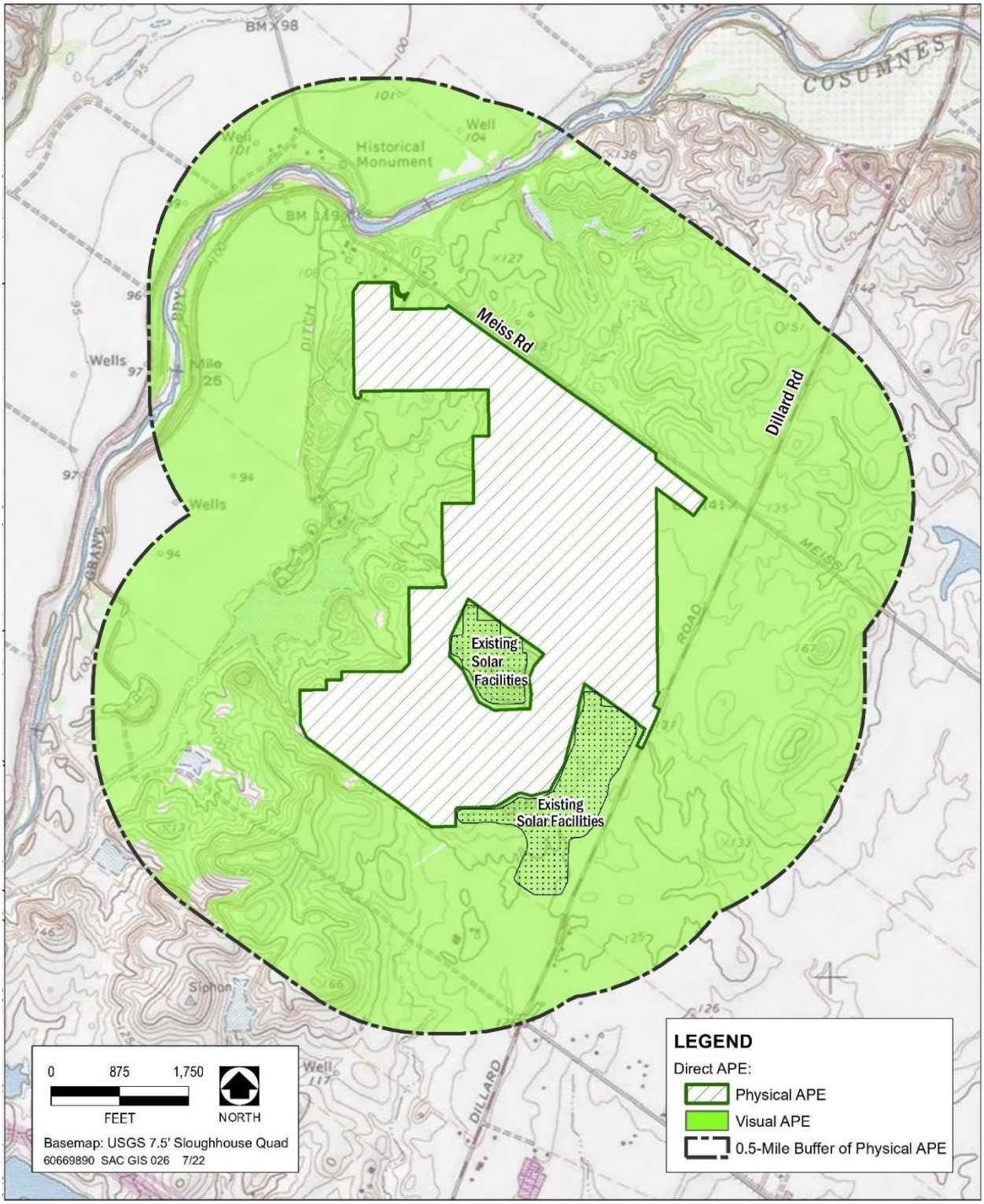
Plate ALT-5 for an illustration of the area of potential effects for Alternative 1. Because the Alternative 1 site is fully encompassed by the proposed project site, the North Central Information Center records search, additional background research, Native American consultation, and field surveys conducted for the proposed project would also apply to the Alternative 1 site.

Similar to the proposed project, because the Alternative 1 site does not contain unique geologic features and Alternative 1 would have no effect on the geologic features that relate to the Cosumnes River, Alternative 1 would have **no impact** on unique geologic features.

IMPACT ALT-CR-1: CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORICAL RESOURCE PURSUANT TO SECTION 15064.5

There are no resources that qualify as CEQA historical resources identified within the Alternative 1 site. The larger area of potential effects includes a 0.5-mile buffer from the proposed project site (which encompasses the Alternative 1 site), to account for potential visual impacts. Within the area of potential effects, but outside of the Alternative 1 site, two historical resources have been identified: the Cosumnes River Levee-South/Sacramento County Levee 41 and the Cosumnes River Levee-North/Sacramento County Levee 18. Both of the levee segments are sited more than 2,000 feet from the northwestern Alternative 1 site boundary. Construction, operation, and decommissioning

Plate ALT-5. Alternative 1 Area of Potential Effects



Source: Dudek 2022, Compiled by AECOM 2022

of Alternative 1 would not result in direct or indirect substantial adverse change to the resources in a way that they would no longer be able to physically convey their historic

significance. Therefore, **no impact** on a historical resource would occur as a result of Alternative 1 project implementation.

IMPACT ALT-CR-2: CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF AN ARCHAEOLOGICAL RESOURCE PURSUANT TO SECTION 15064.5

The same analysis of this impact applied to the proposed project in Chapter 8, "Cultural and Paleontological Resources", would also apply to Alternative 1. No significant pre-contact or historic-age archaeological resources were identified in the Alternative 1 project site. Similar to the proposed project, given that there are previously recorded pre-contact sites within 0.5-mile of the Alternative 1 site and that portions of the site remain relatively undisturbed, the potential of encountering and impacting unknown archaeological resources during Alternative 1 implementation is considered moderate. If such unanticipated discoveries were encountered, impacts on encountered resources would be **potentially significant**.

The project applicant and construction contractor would be required to be aware of the actions required in the event that cultural resources or human remains are encountered during construction. Mitigation Measures CR-1 (Worker Awareness Environmental Program [WEAP] and Archaeological Monitoring) and CR-2 (Cultural Resources and Unanticipated Discoveries) are detailed in Chapter 8. These mitigation measures would also be required for Alternative 1. Because these mitigation measures would reduce the potential impacts in the event of accidental discovery of human remains or previously unknown cultural resources, the resulting impact after mitigation would be **less than significant with mitigation**.

IMPACT ALT-CR-3: DISTURB ANY HUMAN REMAINS, INCLUDING THOSE INTERRED OUTSIDE OF DEDICATED CEMETERIES

The same analysis of this impact applied to the proposed project in Chapter 8, "Cultural and Paleontological Resources", would also apply to Alternative 1. No prehistoric pre-contact or historic-era burials were identified as a result of the records search, which includes the extent of the Alternative 1 site, and the Alternative 1 site is not part of a dedicated cemetery. Similar to the proposed project, given that there are previously recorded burials of prehistoric Native American origin have been identified within 0.5-mile of the Alternative 1 site, there is a potential of encountering and impacting unanticipated human remains during construction and decommissioning of Alternative 1. If such unanticipated discoveries were encountered, impacts on encountered human remains would be **potentially significant**.

The project applicant and construction contractor would be required to be aware of the actions required in the event that cultural resources or human remains are encountered during construction. Mitigation Measure CR-1 (WEAP and Archaeological Monitoring) and CR-2 (Cultural Resources and Unanticipated Discoveries) are detailed in Chapter 8. These mitigation measures would also be required for Alternative 1. Because these mitigation measures would reduce the potential impacts in the event of the accidental discovery of human remains or previously unknown cultural resources, the resulting impact after mitigation would be **less than significant with mitigation**.

IMPACT ALT-CR-4: DAMAGE TO OR DESTRUCTION OF PALEONTOLOGICAL RESOURCES DURING EARTHMOVING ACTIVITIES

The same analysis of this impact applied to the proposed project in Chapter 8, "Cultural and Paleontological Resources", would also apply to Alternative 1. Because Alternative 1 is fully encompassed by the proposed project site, the Alternative 1 site is composed of the same paleontologically sensitive rock formations as the proposed project site and therefore, construction and decommissioning activities could result in accidental damage to, or destruction of, unknown unique paleontological resources. If such paleontologically resources were encountered, impacts on unique paleontological resources would be **potentially significant**.

The County would require the project applicant to retain the services of either a qualified archaeologist or a qualified paleontologist to provide training to all construction personnel involved with earthmoving activities regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossil be encountered. Mitigation Measure CR-3 (Avoid Impacts to Unique Paleontological Resources) is detailed in Chapter 8. This mitigation would also be required for Alternative 1. Because this mitigation measure would reduce project-related impacts on unique paleontological resources, the resulting impact after mitigation would be **less than significant with mitigation**.

HYDROLOGY AND WATER QUALITY

NO PROJECT ALTERNATIVE

Under the No Project alternative, the existing conditions would remain unchanged and agricultural activities, including year-round cattle grazing, at the project site would continue. Significant changes to the project site's hydrology and water quality would not occur. However, as described in Chapter 9, grazing would be reduced under the proposed project as compared to existing conditions. Therefore, the proposed project would result in a substantial decrease in livestock-related pollutants and erosion as compared to existing conditions and impacts related to hydrology and water quality for the No Project alternative would be greater when compared with those of the proposed project.

ALTERNATIVE 1

The same environmental setting and regulatory setting described in Chapter 9, "Hydrology and Water Quality", also apply to Alternative 1.

Similar to the proposed project, the Alternative 1 site is not located in a tsunami or seiche hazard zone. Additionally, temporary construction staging areas and construction trailers would be located outside of the FEMA 100-year floodplain. Once constructed, the proposed substation, battery storage buildings, along with most of the solar panels, access roads, and fencing would be outside of the FEMA 100-year floodplain. The proposed solar panels would be anchored in stable geologic formations via steel piers with concrete mat foundations or on a series of pilings similar in nature to those that hold the solar array to resist flood flows, and there would be no buildings or other structures that would use or store chemicals or other pollutants within the FEMA 100-year floodplain.

Thus, there would be no risk for release of pollutants from inundation in a tsunami, seiche, or flood hazard zone, and there would be **no impact.**

IMPACT ALT-HWQ-1: VIOLATE WATER QUALITY STANDARDS OR SUBSTANTIALLY DEGRADE SURFACE OR GROUNDWATER QUALITY

PROPOSED SOLAR FACILITIES

The same analysis of this impact applied to the proposed project in Chapter 9, "Hydrology and Water Quality", would also apply to Alternative 1. As discussed in Chapter 9, compliance with the laws listed in this chapter, regulations, ordinances, and permit terms would require Alternative 1 to reduce pollutants in construction and operational stormwater runoff generated in the Alternative 1 site through implementation of operation-related Low Impact Development technologies, best management practices, and pollutant source control measures, along with preparation of a Stormwater Pollution Prevention Plan with associated best management practices designed to control construction-related erosion and pollutants. These measures would protect water quality as required by the Basin Plan. Therefore, similar to the proposed project, Alternative 1 would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, and this impact would be **less than significant**.

PROPOSED AGRICULTURAL OPERATIONS

The same analysis of this impact applied to the proposed project in Chapter 9, "Hydrology and Water Quality", would also apply to Alternative 1. As described in Chapter 9, grazing would only occur during an approximately 8-week period in the spring as compared to existing conditions where cattle are grazed at the site year-round. Thus, grazing would be reduced as compared to existing conditions. Therefore, the proposed project would result in a substantial decrease in livestock-related pollutants and erosion as compared to existing conditions. Agricultural water quality issues from grazing, such as fecal bacterial contamination and nutrient over enrichment, are regulated at the federal, State, and local level through Natural Resources Conservation Service (NRCS), SWRCB, and local agricultural conservation district programs as described above. Therefore, like the proposed project, Alternative 1 would not violate water quality standards or substantially degrade surface or groundwater quality and this impact is considered **less than significant**.

IMPACT ALT-HWQ-2: IMPEDE SUSTAINABLE GROUNDWATER MANAGEMENT OF THE BASIN BY SUBSTANTIALLY DECREASING GROUNDWATER SUPPLIES OR INTERFERING WITH GROUNDWATER RECHARGE

GROUNDWATER RECHARGE

The same analysis of this impact applied to the proposed project in Chapter 9, "Hydrology and Water Quality", would also apply to Alternative 1. The Alternative 1 development would include the same components as the proposed project and would result in a nearly identical amount of new impervious surfaces (components that would add impervious surfaces would include the substation, battery storage, entrances, and interior access

roads). Like the proposed project, new impervious surfaces associated with Alternative 1 would only represent approximately 4.5 percent (i.e., 16 acres) of the 372-acre Alternative 1 site, Alternative 1 would not substantially interfere with groundwater recharge. The proposed grazing activities would not represent a change that would impact groundwater storage or recharge compared to existing conditions at the project site. Therefore, like the proposed project, Alternative 1 would not impede sustainable groundwater management of the basin by substantially interfering with groundwater recharge, and this impact would be **less than significant.**

Groundwater Supplies

The same analysis of this impact applied to the proposed project in Chapter 9, "Hydrology and Water Quality", would also apply to Alternative 1. A Water Supply Assessment was prepared for Alternative 1, as required by Senate Bill 610, which is included as Appendix-ALT-4. The Water Supply Assessment evaluated potential impacts from groundwater use for Alternative 1 at the 372-acre Alternative 1 site.

According to the Water Supply Assessment that was prepared, the proposed solar facilities for Alternative 1 would require a total of 259 AF of groundwater over the projected 35-year Alternative 1 life. Averaged over the 35-year Alternative 1 life, the proposed Alternative 1 solar facilities would require approximately 7.4 AFY of groundwater. This is less than the projections for the proposed project, which calculated approximately 38.5 AFY. As described in Chapter 9, groundwater storage within the aquifer underlying the project site is estimated to be 9,532 AF – this estimate is the same for the Alternative 1 site. The largest groundwater volume consumed by the Alternative 1 solar facilities would be 259 AF for the 35-year amortized project life, corresponding to less than 3 percent of the underlying storage.

Based on the modeling results summarized above and in the Water Supply Analysis, Dudek concluded that the 7.4 AFY of groundwater required for Alternative 1 would not substantially contribute to groundwater overdraft and would not substantially impede sustainable groundwater management of the Cosumnes Subbasin for the following reasons:

1. The estimated water demand for Alternative 1 would represent approximately 0.006 percent of the estimated sustainable yield of the Cosumnes Subbasin.

2. Per-acre groundwater use within the Cosumnes Subbasin is 0.65 AFY per acre. The sustainable per-acre groundwater use within the Cosumnes Subbasin is estimated to be approximately 0.6 AFY per acre. The estimated amortized per-acre groundwater use for Alternative 1 is approximately 0.02 AFY per acre, which is well within the Cosumnes Subbasin per-acre sustainable use.

For the reasons described above, based on the groundwater modeling and conclusions provided by Dudek (2022), Alternative 1 would not substantially contribute to groundwater overdraft and would not substantially impede sustainable groundwater management of the Cosumnes Subbasin, and therefore this impact would be **less than significant**.

IMPACT ALT-HWQ-3: SUBSTANTIALLY ALTER DRAINAGE PATTERNS OR ADD IMPERVIOUS SURFACES RESULTING IN INCREASED EROSION OR SILTATION

The same analysis of this impact applied to the proposed project in Chapter 9, "Hydrology and Water Quality", would also apply to Alternative 1. As described in detail in Chapter 9, several existing regulations would apply to the Alternative 1 site and would be implemented to reduce or avoid impacts related to erosion, sedimentation, and water quality degradation during construction as described in the "Regulatory Setting" section. The permits, regulations, and requirements described for the proposed project in Chapter 9 (for construction, operation, and decommissioning) would also apply to Alternative 1. Compliance with the regulatory controls discussed in Chapter 9, which include implementation of a Stormwater Pollution Prevention Plan (SWPPP) with site-specific best management practices, stormwater controls in the California Stormwater Quality Association *Industrial/Commercial Best Management Practices Handbook*, Sacramento County Municipal Code requirements, the *Agricultural Management Plan (*which would also be required for Alternative 1), and compliance with federal and state programs related to agricultural water quality (combined with the fact that substantially fewer animals would be grazed for a much shorter time period) would appropriately control erosion and sedimentation from alteration of drainages and the addition of new impervious surfaces at the Alternative 1 site. Therefore, similar to the proposed project, this impact would be **less than significant** for Alternative 1.

IMPACT ALT-HWQ-4: SUBSTANTIALLY ALTER DRAINAGE PATTERNS OR ADD IMPERVIOUS SURFACES THAT WOULD EXCEED STORM DRAINAGE SYSTEMS, RESULT IN INCREASED FLOODING, OR IMPEDE OR REDIRECT FLOOD FLOWS

The same analysis of this impact applied to the proposed project in Chapter 9, "Hydrology and Water Quality", would also apply to Alternative 1. A Preliminary Drainage Study was prepared by Baker-Williams Engineering Group for Alternative 1 (see Appendix ALT-5). The Preliminary Drainage Study analyzed existing and proposed stormwater runoff for Alternative 1. This report analyzed pre- and post-project conditions with estimated drainage flow rates exiting the Alternative 1 site for 10-year and 100-year storm events, and described how Alternative 1 would comply with water quality requirements. According to this study, the grading and disturbed areas would be revegetated such that the pre-project and post-project surface runoff would not change. The study also describes that coordination with the State Water Board would be required and the project (and Alternative 1) would be in a Risk Level 2 category, meaning ongoing erosion and sediment control requirements would be enforced, monitoring and reporting requirements would be mandatory, and specific best management practices would need to be implemented.

According to this preliminary study, Alternative 1 would fill within the current FEMA flood zone but would also grade areas to mitigate for the loss of flood storage and would therefore result in no net loss of storage within the 100-year floodplain as shown on the Preliminary Grading Plans for Alternative 1.

The Preliminary Drainage Study concludes that the design parameters would adhere to the Sacramento County Improvement Standards and the State Water Resources Control Board water quality requirements; that the post-project flows would have no negative

affect to the existing drain culvert at the outlet of the existing pond; and that Alternative 1 would result in no net loss of storage within the 100-year floodplain. Therefore, according to the analysis in the Preliminary Drainage Study, this impact would be **less than significant** for Alternative 1.

IMPACT ALT-HWQ-5: CONFLICT WITH A WATER QUALITY CONTROL PLAN OR SUSTAINABLE GROUNDWATER MANAGEMENT PLAN

The same analysis of this impact applied to the proposed project in Chapter 9, "Hydrology and Water Quality", would also apply to Alternative 1. The project applicant would be required to comply with the applicable laws, regulations, ordinances, and permit terms that would require Alternative 1 to reduce pollutants in construction and operational stormwater runoff generated in the proposed development area through implementation of operation-related low impact development technologies, BMPs, and pollutant source control measures; preparation of a SWPPP with associated BMPs designed to control construction-related erosion and pollutants; and compliance with federal and state programs that regulate water quality as related to agricultural land uses. These measures would protect water quality as required by the Basin Plan (Central Valley RWQCB 2019). Therefore, development of Alternative 1 (including proposed grazing) would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, and this impact would be **less than significant**.

For the reasons described in Impact ALT-HWQ-2, above, Alternative 1 would not conflict with or obstruct implementation of the *Groundwater Sustainability Plan for the Cosumnes Subbasin* (EKI 2021). Therefore, this impact would be **less than significant**.

NOISE

NO PROJECT ALTERNATIVE

Under the No Project alternative, the existing conditions would remain unchanged and agricultural activities, including year-round cattle grazing, at the project site would continue. The potentially significant impacts identified for the proposed project to result in exceedances of the County's exterior nighttime noise limitations from nighttime construction activities and from the nighttime operation of the inverter and HVAC systems would not occur. Therefore, impacts related to noise would be reduced compared to those of the proposed project.

ALTERNATIVE 1

The same environmental setting and regulatory setting described in Chapter 10, "Noise", apply to Alternative 1.

Similar to the proposed project, because the Alternative 1 site is not within the boundaries of the Mather Airport Land Use Compatibility Plan or associated noise contours, the Alternative 1 site would not be located in an area exposed to excessive aircraft-generated noise levels. Therefore, Alternative 1 would have **no impact** related to aircraft noise.

IMPACT ALT-NOI-1. TEMPORARY, SHORT-TERM EXPOSURE OF SENSITIVE RECEPTORS TO CONSTRUCTION NOISE

The same analysis of this impact applied to the proposed project in Chapter 10, "Noise", would also apply to Alternative 1. Similar to the proposed project, the Alternative 1 project construction could expose existing off-site sensitive receptors to equipment noise levels that exceed the ambient noise conditions during evening and nighttime hours (i.e., outside the permitted hours (Section 6.68.090[e] of the County of Sacramento Code). As with the proposed project, the nearest sensitive receptor to the Alternative 1 site approximately 50 feet north along Meiss Road would be subject to noise levels ranging from 77 to 94 dBA. As a result, nighttime construction could substantially exceed the measured ambient noise levels shown in Table NOI-4, as well as the applicable exterior nighttime noise standard of 50 dB provided on Table NOI-8. Moreover, with the assumption that closed windows would reduce interior noise levels by 25 dB, the resulting interior noise level of 52 to 68 dBA would exceed the interior nighttime noise standard of 35 dB provided on Table NOI-8, as well as the Environmental Protection Agency sleep disturbance criteria of 45 dB L_{dn}. Therefore, construction activities occurring during the evening and nighttime hours would result in a **potentially significant impact**.

The project applicant and construction contractor would be required under Alternative 1 to implement noise-reducing construction practices and monitor and record construction noise near sensitive receptors for evening and nighttime construction activities. Mitigation Measure NOI-1 (For Evening and Nighttime Construction (i.e., outside of permitted construction hours (Section 6.68.090[e] of the County of Sacramento Code), Implement Noise-Reducing Construction Practices and Monitor and Record Construction Noise near Sensitive Receptors) is detailed in Chapter 10. This mitigation measure would also be required for Alternative 1 and would reduce impacts from temporary exposure of sensitive receptors to nighttime noise. As with the proposed project, to ensure Alternative 1 nighttime construction activities do not exceed County noise standards or result in sleep disturbance, construction noise levels would be monitored at or near proximate residences during evening or nighttime construction activities occurring outside the hours exempted by the County Noise Ordinance, with activities ceased if measurements exceed the nighttime noise limit of 50 dB. As a result, with implementation of Mitigation Measure NOI-1, the resulting impact would be **less than significant with mitigation**.

With respect to Alternative 1 construction traffic noise, as shown in Table NOI-14, the number of trips added to existing traffic volumes along the existing nearby roadways would result in a noise increase of up to 3 dB at the nearest noise-sensitive uses from Dillard Road centerlines. However, construction traffic noise would result in a peak noise increase of 14 dB at the nearest noise-sensitive uses from the Meiss Road centerline during the two-month grading period. Without off-hauling, construction traffic noise for Alternative 1 would be reduced compared to the proposed project. Also, construction activities that occur within the hours prescribed by the County Noise ordinance (refer to Table NOI-11) are exempt from the County noise standards, and as a result would not violate County standards. Thus, the impact of construction noise, including that resulting from construction-related traffic, which occurs during daytime hours conforming to the County Noise ordinance, is considered **less than significant**.

IMPACT ALT-NOI-2. TEMPORARY, SHORT-TERM EXPOSURE OF SENSITIVE RECEPTORS TO POTENTIAL GROUNDBORNE NOISE AND VIBRATION FROM PROJECT CONSTRUCTION

Similar to the proposed project, under Alternative 1, short-term construction and decommissioning activities would not expose sensitive receptors to groundborne noise and vibration levels that would exceed applicable standards that indicate human disturbance or damage to structures could result. As a result, and as detailed in the discussion that follows, this impact is considered **less than significant**.

IMPACT ALT-NOI-3. PERMANENT EXPOSURE OF OFF-SITE NOISE-SENSITIVE RECEPTORS TO GENERATION OF NON-TRANSPORTATION NOISE LEVELS IN EXCESS OF LOCAL STANDARDS

The same analysis of this impact applied to the proposed project in Chapter 10, "Noise", would also apply to Alternative 1. As detailed above in the Alternative 1 description and similar to the proposed project, Alternative 1 would include the installation of solar panels and associated facilities that include inverters, transformers, and a gen-tie facility at the existing substation. As shown on Table NOI-15, the highest operational noise levels would occur from the inverter and HVAC system (i.e., 58 dBA at 75 feet). Because Alternative 1, like the proposed project, would provide backup battery power, the inverter/HVAC facilities would be operational during evening and nighttime hours. To comply with the County's exterior nighttime noise limitation of 50 dB as provided in Table NOI-8, based on a noise rating of 58 dBA at 75 feet from the inverter and HVAC system, such facilities would need to be located approximately 200 feet from the nearest noise-sensitive land use. Since the nearest residences along Meiss Road are approximately 50 feet north of the Alternative 1 site (refer to Plate NOI-2, Sensitive Land Use and Noise Monitoring Locations for the location of nearby residences and Plate ALT-3, Conceptual Site Plan for the Alternative 1 site plan and layout), noise levels from the inverter and HVAC system would be **potentially significant**.

Alternative 1 would require that the project applicant provide sufficiently detailed designs demonstrating that operation of the proposed project facilities would not exceed County noise standards, including the County's nighttime noise standards. Mitigation Measure NOI-2 (Site Project Facilities Sufficiently Distance to Reduce Operational Noise Levels Below County General Plan Standards) is detailed in Chapter 10. This mitigation would also be required for Alternative 1. This mitigation measure would ensure that noise-generating facilities are designed and sited in a manner (i.e., distanced or enclosed) that reduces noise levels to below the applicable County noise standards. As a result, the noise impact resulting from operation of the Alternative 1 facilities would be **less than significant with mitigation.**

Similar to the proposed project, maintenance activities for Alternative 1 would include periodic inspections, and as-needed repair or replacement of the panels or platforms, power distribution facilities, and fencing. Additional activities would include ongoing agricultural operations (e.g., grazing) and weed management as needed, and periodic panel washing. Due to the limited scale, intensity, and periodic frequency of these activities, the associated noise impact during proposed Alternative 1 operations would be **less than significant**.

Traffic and Circulation

No Project Alternative

Under the No Project alternative, the existing conditions would remain unchanged and agricultural activities, including year-round cattle grazing, at the project site would continue. The potentially significant impact identified for the proposed project to result in an increase in traffic hazards caused by the temporary addition of oversize vehicles, haul trucks, and worker vehicles would not occur. Therefore, impacts related to traffic and circulation would be reduced when compared to those of the proposed project.

Alternative 1

The same environmental setting and regulatory setting described in Chapter 11, "Traffic and Circulation", apply to Alternative 1.

As with the proposed project, local access to the Alternative 1 site would be from Dillard Road. Access to components of the solar field would be controlled through security gates at several entrances. Multiple gate restricted access points would be used during construction and operation.

During the approximately eight-month construction period, daily trip generation would occur for delivery of equipment and supplies and the commuting of the construction workforce. Similar to the proposed project, the number of workers expected on-site during construction of Alternative 1 would vary over the construction period and would likely average 150 workers per day. Deliveries of equipment and supplies to the site would also vary over the construction period but have the potential to range from 5 to 40 round trips, averaging approximately 10 daily round trips. During the approximately two months of grading activity, no additional truck trips would be generated to haul off excess grading material because Alternative 1 would have a balanced volume of cut and fill material during site grading, there would be no import or export of grading material required. An estimated peak of 380 trips per day generated during construction of Alternative 1 (300 worker trips and 80 delivery truck trips), which is approximately 222 fewer truck trips per day compared to the proposed project. Parking for vehicles would be provided on-site during construction. As construction progresses, the parking area would be relocated adjacent to new phases.

Impact ALT-TC-1: Conflict with a Program, Plan, Ordinance or Policy Addressing the Circulation System, including Transit, Roadway, Bicycle, and Pedestrian Facilities

Construction

As with the proposed project, regional access to the Alternative 1 site during construction would be from SR 16, with local access provided by Dillard Road and Meiss Road. Similar to the proposed project, an estimated 300 one-way worker trips and 80 one-way truck trips would be generated daily during construction (the same estimate as for the proposed project). However, because the design of Alternative 1 provides for a balanced volume of cut and fill material during site grading, this alternative would avoid the off-site disposal

of 78,000 cubic yards of excess grading material required under the proposed project. As a result, Alternative 1 would reduce truck traffic by avoiding the estimated 222 truck trips per day required for the disposal of grading material under the proposed project.

Relative to existing traffic volumes, construction of Alternative 1 would result in a short-term increase in daily traffic of less than 3 percent on SR 16 (versus a 3 to 4 percent increase under the proposed project). Similar to the proposed project, the short-term increase in daily traffic on Dillard Road under Alternative 1 would average about 8 percent; however, Alternative 1 does not involve the offsite disposal of excess grading material that is required under the proposed project and thus would avoid the additional truck trips under the proposed project that increase traffic volume on Dillard Road to a maximum of 13 percent during the grading activities. Regarding peak-hour traffic volumes, Alternative 1 would generate the same number of construction worker trips as the proposed project (150 peak-hour vehicles). While this would increase existing peak-hour traffic volumes by about 32 percent, based on the estimated peak-hour traffic volume of 500 ADT on Dillard Road and capacity of about 1,200 vehicles per hour (FHWA 2017), the addition of 150 peak-hour vehicles during construction would not substantially alter the existing roadway capacity or local traffic circulation. Thus, peak-hour traffic increases would be the same as under the proposed project.

In sum, similar to the proposed project, the effect on daily and peak-hour traffic volumes would be temporary, limited to the estimated eight-month construction period. Moreover, the additional vehicle trips generated during construction would not substantially alter existing roadway capacity. Thus, construction activities under Alternate 1 would not conflict with any applicable plan, policy or ordinance related to the transportation system that could result in a substantial adverse environmental effect.

As with the proposed project, no bus stops, pedestrian, or bicycle facilities would be impacted from construction under Alternative 1. Similarly, temporary construction activities would not impede or otherwise conflict with implementation of the planned Class II bike lane along Dillard Road. Thus, construction of Alternative 1 would not have a substantial adverse effect on the area's roadways or other existing or planned transportation facilities. Therefore, the impact of Alternative 1 construction activities on traffic circulation, transit, bicycle and pedestrian facilities would be **less than significant**.

OPERATION

As with the proposed project, Alternative 1 would be operated remotely through a local solar operations and maintenance company and panel washing would occur one to four times per year for up to two weeks. Thus, the operational impacts of Alternative 1 and the proposed project would both result in impacts on traffic circulation, transit, bicycle, and pedestrian facilities that would be **less than significant**.

IMPACT ALT-TC-2: CONFLICT OR BE INCONSISTENT WITH CEQA GUIDELINES SECTION 15064.3, SUBDIVISION (B)

CONSTRUCTION AND OPERATION

As detailed in Chapter 11, the proposed project's operational characteristics meet the screening criteria provided in the Sacramento County *Transportation Analysis Guidelines* (Sacramento 2020). Alternative 1 would also meet these screening criteria, specifically:

- Small projects that generate less than 237 average daily traffic (ADT) – while Alternative 1 may not be considered "small" based on its physical footprint, it is consistent with a "small project" based on trip generation. Daily trip generation during operation of the project would average 4 to 10 trips per day. This is well below the threshold of 237 average daily trips provided in the County guidelines. Operational impacts would generate less than the daily trips threshold.

- Local-Serving Public Facilities/Services including utilities – The power generated by the proposed solar facilities would connect with the SMUD 69 kV powerlines. Alternative 1 meets the screening criteria as a local-serving public utility and solar energy facility.

As with the proposed project, because Alternative 1 would meet these screening criteria no analysis of VMT is warranted and the impact would be **less than significant**. As noted for the proposed project, while VMT is the preferred methodology for assessing transportation impacts under CEQA, LOS effects may be considered during a project's approval phase to the extent that such standards are present in applicable local plans (e.g., General Plan) and guidelines.

IMPACT ALT-TC-3: SUBSTANTIALLY INCREASE HAZARDS DUE TO A GEOMETRIC DESIGN FEATURE (E.G., SHARP CURVES OR DANGEROUS INTERSECTIONS) OR INCOMPATIBLE USES (E.G., FARM EQUIPMENT)

CONSTRUCTION

The same analysis of this impact applied to the proposed project in Chapter 11, "Traffic and Circulation", would also apply to Alternative 1. While there would be a decrease in truck traffic during site grading under Alternative 1 compared to the proposed project (due to a balanced grading plan with no offsite disposal), the introduction of additional traffic movements and oversized vehicles to the local road network could increase traffic hazards and result in a **potentially significant** impact. If not otherwise required by issuance of an encroachment permit, Alternative 1 would require preparation and implementation of a traffic control plan in accordance with the California Manual of Traffic Control Devices. Mitigation Measure TC-1 (Prepare and Implement Traffic Control Plan) is detailed in Chapter 11. Because this mitigation measure would limit the potential for traffic hazards during construction by providing sufficient warning to motorists and implementing features such as flaggers and traffic cones, the resulting impact after mitigation would be **less than significant with mitigation**.

OPERATIONS

As with the proposed project, periodic maintenance and panel washing would not generate substantial traffic or involve conflicts on adjacent roadways that would result in traffic hazards. Therefore, the impact of Alternative 1 would be **less than significant**.

IMPACT ALT-TC-4: RESULT IN INADEQUATE EMERGENCY ACCESS

CONSTRUCTION AND OPERATION

This impact would be essentially the same as the impact as analyzed for the proposed project in Chapter 11, "Traffic and Circulation". In sum, no changes to the public roadway network would occur under Alternative 1 and limited traffic would be generated during operations. Thus, operation of Alternative 1 would have **no impact** on emergency access. As with the proposed project, Alternative 1 construction impacts would generally be limited to on-site, and not directly impact the area's public roadways or substantially impede access to or from nearby properties. As a result, the impact of construction would be **less than significant**. To the extent that emergency access in the project vicinity could be temporarily impeded during construction, the measures provided in Mitigation Measure TC-1 (Prepare and Implement Traffic Control Plan) described above would serve to ensure that sufficient emergency access is available for the duration of the construction period.

TRIBAL CULTURAL RESOURCES

NO PROJECT ALTERNATIVE

Under the No Project alternative, the existing conditions would remain unchanged and agricultural activities, including year-round cattle grazing, at the project site would continue. The potentially significant impacts identified for the proposed project related to encountering and impacting unknown TCRs would not occur. Therefore, impacts related to TCRs would be reduced when compared to those of the proposed project.

ALTERNATIVE 1

The same environmental setting and regulatory setting described in Chapter 12, "Tribal Cultural Resources", apply to Alternative 1, except for a reduced Alternative 1 site of approximately 372 acres, compared to 380 for the proposed project.

IMPACT ALT-TCR-1: CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A TRIBAL CULTURAL RESOURCE

The same analysis of this impact applied to the proposed project in Chapter 12, "Tribal Cultural Resources", would also apply to Alternative 1. The AB 52 consultation that was conducted for the proposed project included the entire Alternative 1 site and would satisfy the AB 52 requirements for Alternative 1. As described in Chapter 12, "Tribal Cultural Resources", pursuant to the AB 52 consultation requirement, formal AB 52 notification letters were sent on September 1, 2021 to Native American tribal contacts who previously requested to be notified of Sacramento County projects within their traditionally and culturally affiliated area. The AB 52 notification package included a brief cover letter,

complete project description, and cultural report. Responses from formal AB 52 notification letters sent by Sacramento County were received from Wilton Rancheria and the UAIC and mitigation was developed through consultation. Similar to the proposed project, the Alternative 1 area of potential effects has moderate sensitivity for TCRs and may potentially contain buried TCRs that could be unearthed during ground disturbing activities for the Alternative 1 project. If such unanticipated discoveries of TCRs were encountered, impacts on TCRs would be **potentially significant**.

Alternative 1 would require three mitigation measures to reduce impacts to TCRs. Mitigation Measure TCR-1a (Inadvertent/Unanticipated TCR Discoveries), TCR-1b (Native American TCR Monitoring), and TCR-1c (Notification and Inspection of Ground Disturbance) are detailed in Chapter 12. Because these mitigation measures would reduce the potential impacts in the event of accidental discovery or impacts to previously unknown TCRs, the resulting impact after mitigation would be **less than significant with mitigation**.

Wildfire

No Project Alternative

Under the No Project alternative, the existing conditions would remain unchanged and agricultural activities, including year-round cattle grazing, at the project site would continue. The potentially significant impacts identified for the proposed project related to construction vehicles impairing an adopted emergency response plan or emergency evacuation plan and potentially exacerbating wildfire risk would not occur. Therefore, impacts related to wildfire would be reduced when compared to those of the proposed project.

Alternative 1

The same environmental setting and regulatory setting described in Chapter 13, “Wildfire”, apply to Alternative 1.

Similar to the proposed project, the project applicant for Alternative 1 would be required to comply with the County’s Land Grading and Erosion Control Ordinance (Sacramento County Municipal Code Chapter 16.44) and Floodplain Management Ordinance Chapter 16.02, obtain a permit from the County Floodplain Administrator, prepare a Stormwater Pollution Prevention Plan, and implement site-specific Best Management Practices that manage stormwater runoff and erosion. As described in the Preliminary Drainage Study (Appendix ALT-5), the calculations in the drainage study show that the design parameters would comply with the Sacramento County Improvement Standards and would adhere with the State Water Resources Control Board water quality requirements. According to this study, the post-Alternative 1 flows would have no negative affect to the existing drain culvert at the outlet of the existing pond and Alternative 1 would result in no net loss of storage within the 100-year floodplain. Therefore, Alternative 1 would not create conditions that cause downstream runoff, post-fire slope instability, or drainage changes that would expose people or structures to significant risks, and thus would result in **no impact**.

IMPACT ALT-WF-1: SUBSTANTIALLY IMPAIR AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN

The same analysis of this impact applied to the proposed project in Chapter 13, "Wildfire", would also apply to Alternative 1. Similar to the proposed project, in the event of an emergency, Dillard Road and State Route 16 would be used as evacuation routes for Alternative 1 (Sacramento County Office of Emergency Services 2018).

CONSTRUCTION

Similar to the proposed project, under Alternative 1, construction materials, equipment, and personnel would be staged on the Alternative 1 site and all emergency ingress and egress routes on the surrounding roadways would remain open and unblocked during both construction and operation. As described in Chapter 11, "Traffic and Circulation", and Chapter 13, "Wildfire", the implementation of a traffic control plan during construction as part of Mitigation Measure TC-1 would be required to ensure safe and efficient movement of traffic in the affected area. The traffic control plan would include signage, traffic cones, and flaggers to ensure safe and efficient movement of traffic through the affected area. Additionally, the traffic control plan would notify emergency responders regarding the planned construction activities. Without a traffic control plan, Alternative 1 could result in a **potentially significant impact** by impairing implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan.

Alternative 1 would require preparation and implementation of a traffic control plan in accordance with the California Manual of Traffic Control Devices. Mitigation Measure TC-1 (Prepare and Implement Traffic Control Plan) is detailed in Chapter 11. Because this mitigation measure would limit the potential for traffic hazards during construction by providing sufficient warning to motorists and implementing features such as flaggers and traffic cones, the resulting impact after mitigation would be **less than significant with mitigation**.

OPERATIONS

Alternative 1 would be operated remotely. Limited traffic volumes would be anticipated during operations for activities such as periodic maintenance and panel washing activities, which would not generate substantial traffic. Therefore, the Alternative 1 operations would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and the impact would be **less than significant**.

IMPACT ALT-WF-2: EXACERBATE WILDFIRE RISK

The same analysis of this impact applied to the proposed project in Chapter 13, "Wildfire", would also apply to Alternative 1. The Alternative 1 project site would have the same on-site components as the proposed project, including pole-mounted solar panel arrays, an electrical substation, battery storage buildings, small one-story office building, internal roadways, fencing and gates, and other ancillary facilities. Similar to the proposed project, Alternative 1 would not be within a SRA or on lands classified as a very high fire hazard severity zone (Plate WF-1 and Plate WF-2 in Chapter 13). However, the Alternative 1 site

boundary is adjacent to lands east of Dillard Road that are within a SRA, and these lands are designated by CAL FIRE as Moderate Fire Hazard Severity Zones.

CONSTRUCTION

The same analysis of this impact applied to the proposed project in Chapter 13, “Wildfire”, would also apply to Alternative 1. The primary fire hazards during construction would be from vehicles and construction equipment. The construction of Alternative 1 would be required to comply with all laws, plans, policies, and regulations related to fire safety and wildfire suppression identified in the Regulatory Setting section of Chapter 13, “Wildfire”. Any potentially flammable substances required for construction would be required to be used and stored in accordance with all applicable federal, state, and local laws, regulations, and policies (see Chapter 15 and the discussion of Hazards and Hazardous Materials for further detail).

OPERATIONS

Alternative 1 would be operated remotely. Limited traffic volumes would be anticipated during operations for activities such as periodic maintenance and panel washing activities, which would not generate substantial traffic. Intermittent maintenance activities would increase the potential for ignition on-site due to the use of equipment and vehicles.

Similar to the proposed project, other potential causes of wildfire associated with operation and maintenance of Alternative 1 could include direct current arc faults, hot spot effects, electrical shorts, sparking, motor or other machinery fire, wiring and harnessing fire, overheated junction boxes, vandalism, fire in an inverter, short circuit and fire of components in or on a panel, potential for sun reflection from panels igniting vegetation, substation and switchgear fire, thermal runaway associated with battery energy storage facilities, and construction of other internal infrastructure such as aggregate base roadways. See Chapter 13, “Wildfire”, for a discussion about why the fire risk in photovoltaic systems and ancillary facilities is low and that compliance with the applicable State regulations and fire codes would further reduce potential fire risks.

DECOMMISSIONING

Similar to the proposed project, Alternative 1 would be decommissioned at the end of its operational life and decommissioning would occur in accordance with Sacramento County’s decommissioning requirements, as documented in the project’s *Decommissioning and Site Restoration Plan* (Dudek 2021b). During decommissioning, Alternative 1 would be required to comply with all laws, plans, policies, and regulations related to fire safety and wildfire suppression identified in the discussion in Chapter 13, Wildfire, under Regulatory Setting, including PRC Section 4427, PRC Section 4428, PRC Section 4431, and PRC Section 4442. Strict adherence to applicable PRCs requirements would ensure that wildfire risks are minimized.

IMPACT CONCLUSION

As with the proposed project, Alternative 1 would not be within a SRA or on lands classified as a very high fire hazard severity zone and wildfire risks during construction, operation, and decommissioning would be offset by compliance with fire safety and

wildfire suppression measures identified in the Regulatory Setting discussion in Chapter 13, Wildfire. Adherence to these safety measures, when considered together, would minimize the risk of increased frequency, intensity, or size of wildfires and decrease the risk of exposure of people or structures to wildfire. All of the Alternative 1 facilities would be installed, operated, and maintained following all applicable design, safety, and fires standards. Many of the Alternative 1 components, such as the solar photovoltaic panels and their mounting systems; gen-tie transmission structures; and structures housing inverters, transformers, and battery storage facilities, would not exacerbate fire risks due to the nonflammable nature of their foundations and constituent parts.

During operation, the Alternative 1 site would be converted to industrial development in the form of new solar generating facilities and these new facilities would be surrounded by dryland pasture housing a combination of grassland species and non-invasive forbs (Dudek 2023). As with the proposed project, the Alternative 1 site would be grazed in the springtime while the forage conditions are appropriate for the grazing animals, approximately starting between March and April, as governed by an *Agricultural Management Plan* (Dudek 2023). The Agricultural Management Plan has been developed to manage grasslands on-site with provisions to minimize fire risk. The installation of the Alternative 1 components in the previously undisturbed agricultural field would introduce structures that could make grazing less efficient and could result in a **potentially significant impact** if vegetation is not properly maintained on-site in a way that could exacerbate wildfire risk.

Alternative 1 would require the applicant to incorporate California Fire Code requirements, California Building Code requirements, and Sacramento Metro Fire Department standards into project designs and by requiring that vegetation is managed on-site, particularly during the dry season (May through November). Mitigation Measure WF-1 (Demonstrate Compliance with the California Fire Code, California Building Code, and Sacramento Metro Fire Department Requirements and Standards, and Manage Vegetation On-site) is detailed in Chapter 13. Because this mitigation measure would reduce potentially significant impacts associated with the exacerbation of wildfire risks through compliance with the appropriate fire code design requirements, fire department regulations, and vegetation management, impacts related to the potential for the proposed project to exacerbate wildfire risks would be **less than significant with mitigation**.

COMPARATIVE COMPARISON OF ENVIRONMENTAL EFFECTS

For comparison purposes, Table ALT-10 provides the impacts of the proposed project before mitigation, the No Project alternative and Alternative 1 (Modified Project Footprint).

- NI: indicates the project's impact is no impact
- LS: Indicates the project's impact is less than significant
- PS: Indicates the project's impact is potentially significant
- Less: Indicates the impact is less than the proposed project
- Similar: Indicates the impact is equal or similar to the proposed project
- Greater: Indicates the impact is greater than the proposed project

Table ALT-10: Comparison of Alternatives to the Proposed Project

Impact Category	Proposed Project Before Mitigation	No Project Alternative	Alternative 1: Modified Project Footprint
Aesthetics			
Impact AE-1: Substantially Degrade the Existing Visual Character or Quality of the Project Site	PS	Less	Similar
Impact AE-2: Create Substantial New Sources of Light and Glare	PS	Less	Similar
Agricultural Resources and Land Use			
Impact AL-1: Conversion of Agricultural Land to Non-Agricultural Use	PS	Less	Less
Impact AL-2: Changes in the Existing Environment that Could Indirectly Result in Conversion of Farmland to Non-agricultural Use	LS	Less	Similar
Impact AL-3: Consistency with Plans, Policies, and Regulations	LS	Less	Similar
Air Quality			
Impact AQ-1: Conflict with or Obstruct Implementation of the Applicable Air Quality Plan	PS	Less	Less
Impact AQ-2: 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	PS	Less	Less
Impact AQ-3: Expose Sensitive Receptors to Substantial Pollutant Concentrations	LS	Less	Less
Impact AQ-4: Result in other Emissions (such as those Leading to Odors) Adversely Affecting a Substantial Number of People	LS	Similar	Similar
Biological Resources			
Impact BR-1: 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 CDFW or USFWS	PS	Less	Less
Impact BR-2: Have a Substantial Adverse Effect on Any Riparian Habitat or Other Sensitive Natural Community Identified in Local or Regional Plans, Policies, or Regulations, or by CDFW or USFWS	PS	Less	Less
Impact BR-3: Have a Substantial Adverse Effect on State or Federally Protected Wetlands (including, but not Limited to, Marsh, Vernal Pool, Coastal) through Direct Removal, Filling, Hydrological Interruption, or Other Means	PS	Less	Less

Impact Category	Proposed Project Before Mitigation	No Project Alternative	Alternative 1: Modified Project Footprint
Impact BR-4: 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	PS	Less	Less
Impact BR-5: Conflict with Any Local Policies or Ordinances Protecting Biological Resources, such as a Tree Preservation Policy or Ordinance	PS	Less	Similar
Impact BR-6: Conflict with the Provisions of an Adopted HCP, Natural Community Conservation Plan, or other approved Local, Regional, or State HCP	LS	Less	Similar
Climate Change			
Impact CC-1: Generate Greenhouse Gas Emissions, Either Directly or Indirectly, that May have a Significant Impact on the Environment	LS	Greater	Less
Impact CC-2: Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases	LS	Greater	Similar
Cultural and Paleontological Resources			
Impact CR-1: Cause a Substantial Adverse Change in the Significance of a Historical Resource Pursuant to Section 15064.5	NI	Similar	Similar
Impact CR-2: Cause a Substantial Adverse Change in the Significance of an Archaeological Resource Pursuant to Section 15064.5	PS	Less	Similar
Impact CR-3: Disturb any Human Remains, Including Those Interred Outside of Dedicated Cemeteries	PS	Less	Similar
Impact CR-4: Damage to or Destruction of Paleontological Resources During Earthmoving Activities	PS	Less	Similar
Hydrology and Water Quality			
Impact HWQ-1: Violate Water Quality Standards or Substantially Degrade Surface or Groundwater Quality	LS	Greater	Similar
Impact HWQ-2: Impede Sustainable Groundwater Management of the Basin by Substantially Decreasing Groundwater Supplies or Interfering with Groundwater Recharge	LS	Less	Less
Impact HWQ-3: Substantially Alter Drainage Patterns or Add Impervious Surfaces Resulting in Increased Erosion or Siltation	LS	Less	Similar

Impact Category	Proposed Project Before Mitigation	No Project Alternative	Alternative 1: Modified Project Footprint
Impact ALT-1: Substantially Alter Drainage Patterns or Add Impervious Surfaces That Would Exceed Storm Drainage Systems, Substantially Degrade Water Quality, Result in Increased Flooding, or Impede or Redirect Flood Flows	LS	Less	Similar
Impact HWQ-5: Conflict with a Water Quality Control Plan or Sustainable Groundwater Management Plan	LS	Less	Similar
Noise			
Impact NOI-1. Temporary, Short-Term Exposure of Sensitive Receptors to Construction Noise	PS	Less	Less
Impact NOI-2. Temporary, Short-Term Exposure of Sensitive Receptors to Potential Groundborne Noise and Vibration from Project Construction	LS	Less	Similar
Impact NOI-3. Permanent Exposure of Off-Site Noise-Sensitive Receptors to Generation of Non-Transportation Noise Levels in Excess of Local Standards	PS	Less	Similar
Traffic and Circulation			
Impact TC-1: Conflict with a Program, Plan, Ordinance or Policy Addressing the Circulation System, including Transit, Roadway, Bicycle, and Pedestrian Facilities	LS	Less	Less
Impact TC-2: Conflict or be Inconsistent With CEQA Guidelines Section 15064.3, Subdivision (b)	LS	Less	Similar
Impact TC-3: Substantially Increase Hazards Due to a Geometric Design Feature (e.g., Sharp Curves or Dangerous Intersections) or Incompatible Uses (e.g., Farm Equipment)	PS	Less	Similar
Impact TC-4: Result in Inadequate Emergency Access	LS	Less	Similar
Tribal Cultural Resources			
Impact TCR-1: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource	PS	Less	Similar
Wildfire			
Impact WF-1: Substantially Impair an Adopted Emergency Response Plan or Emergency Evacuation Plan	PS	Less	Similar
Impact WF-2: Exacerbate Wildfire Risk	PS	Less	Similar

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines require that a No Project alternative be evaluated and although the No Project alternative could be considered the environmentally superior alternative, when the No Project alternative is the environmentally superior alternative, another environmentally superior alternative among the other alternatives must also be identified (CEQA Guidelines Section 15126.6[e][2]).

As described above, the CEQA Guidelines provide that the discussion of alternatives in an EIR should focus on alternatives to the project "which are capable of avoiding or substantially lessening any significant effects of the project" (CEQA Guidelines Section 15126.6[b]). In accordance with the CEQA Guidelines and case law, Alternative 1 has been developed to avoid and reduce potentially significant effects of the proposed project to less than significant, and to further reduce other less than significant effects of the proposed project. Alternative 1 is environmentally superior to the proposed project.

Table ALT-10 provides a summary comparison of the impacts of the proposed project and the alternatives that were analyzed. As indicated in Table ALT-10, the No Project alternative would reduce impacts to all resource areas listed above, except for Climate Change Impact CC-1, Climate Change Impact CC-2, Cultural Resources Impact CR-1, and Hydrology and Water Quality Impact HWQ-1. The No Project alternative would not meet any of the project objectives listed in Chapter 2 and in the Considerations for Selection of Alternatives Section, above. The No Project alternative would not result in the energy and GHG emissions benefits achieved under the proposed project or Alternative 1. For example, once operational, the proposed project and Alternative 1 would increase the region's renewable power resources and overall generation capacity, resulting in a net increase in energy resources. Consistent with the goals included in Appendix F of the CEQA Guidelines, the proposed project and Alternative 1 would contribute to the overall goal of decreasing reliance on fossil fuels and increasing reliance on renewable energy sources. Similarly, the No Project alternative would not result in a GHG emissions benefit. Implementation of the proposed project and Alternative 1 would create a GHG-free energy resource and increase SMUD's renewable energy supply and help reduce GHG emissions associated with SMUD's power generation. The development of renewable energy sources, such as the proposed project and Alternative 1, are a necessity to meet the State Renewables Portfolio Standard requirements, realizing a 100 percent renewable energy power mix, and achieving overall state GHG emissions reduction targets.

The proposed project and Alternative 1 would build a 50 MW solar photovoltaic energy-generating facility. As identified above in Table ALT-10, Alternative 1 would result in reduced impacts to Air Quality, Biological Resources, Climate Change, Hydrology and Water Quality, Noise, and Traffic and Circulation when compared to the proposed project. Both the proposed project and Alternative 1 would meet all of the project objectives defined for the project. Alternative 1 would be environmentally superior because of the reduced impacts in the environmental topics listed above, particularly the reduced impacts on Biological Resources, while still meeting all of the project objectives.

Additionally, Alternative 1 incorporates a reduced project footprint and would balance the volume of cut and fill material during site grading, which would result in a reduction of Air Quality, Greenhouse Gas, Noise, and Traffic and Circulation impacts.

For these reasons, Alternative 1 would be considered the environmentally superior alternative. Alternative 1 would result in the fewest impacts while still meeting all of the project objectives.

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15 SUMMARY OF IMPACTS AND THEIR DISPOSITION

SUMMARY OF IMPACTS BY SIGNIFICANCE DETERMINATION

The following provides a summary of the conclusions reached in the evaluation of the project in Chapters 3 through 13 of this draft environmental impact report (EIR). For a tabulated summary of the effects of the proposed project, applicable mitigation, and significance determinations, refer to Table ES-1 in Chapter 1, Executive Summary.

SIGNIFICANT EFFECTS WHICH CANNOT BE AVOIDED

A "significant and unavoidable impact" is an impact that exceeds the defined standards of significance and cannot be eliminated or reduced to a less-than-significant level through the implementation of mitigation measures. With implementation of the recommended mitigation measures, no project impacts were determined to be significant and unavoidable.

SIGNIFICANT EFFECTS WHICH COULD BE AVOIDED WITH IMPLEMENTATION OF MITIGATION MEASURES

The following impacts were determined to be less than significant with mitigation upon being evaluated in this document.

AESTHETICS

As detailed in Impact AE-1 in Chapter 3, the proposed project would result in a potentially significant impact from degradation of visual character and quality along Meiss Road and Dillard Road. Mitigation Measure AE-1 (Prepare and Implement a Landscape Screening and Irrigation Plan that Will be Monitored for Long-term Success) requires that the applicant implement a Landscape Planting and Irrigation Plan, which would be reviewed and approved by the County prior to issuance of building permits. This plan would describe the plants species, sizes, and locations, along with an irrigation schedule, necessary to achieve plant maturity to provide sufficient screening. This mitigation measure would also require that the landscape screening is maintained in a condition that effectively screens the proposed facilities from Meiss Road and Dillard Road throughout the project's 35-year lifespan. Therefore, this impact would be less than significant with implementation of Mitigation Measure AE-1. As detailed in Impact AE-2, nighttime lighting associated with project-related construction activities could result in sleep disruption for residents within 500 feet of Meiss Road and Dillard Road. Mitigation Measure AE-2 (Prepare a Construction Lighting Plan) requires that the construction contractor erect a temporary 6-foot-tall solid-screened fence at the edge of the construction area, between the work area and the residence/roadway. Furthermore, all nighttime lighting must be shielded and directed downward, and must use the minimum amount of foot-candle power necessary to provide illumination. Therefore, this impact would be less than significant with implementation of Mitigation Measure AE-2.

Agricultural Resources and Land Use

As detailed in the discussion in Chapter 4, Impact AL-1, the proposed project would result in the conversion of existing farmland including approximately 66 acres designated as Farmland of Local Importance. Mitigation Measure AL-1 (Implement the Agricultural Management Plan) would require implementation of an Agricultural Management Plan, which would entail continued agricultural use on the project site (e.g., grazing) and maintenance of the existing soil characteristics. As a result, the impact would be less than significant with implementation of Mitigation Measure AL-1.

Air Quality

Construction of the proposed project would result in the emission of criteria pollutants that exceed the recommended thresholds of significance established by the Sacramento Metropolitan Air Quality Management District. As detailed in Chapter 5, under the analysis of Impact AQ-1 and Impact AQ-2, construction-related emissions would exceed the established thresholds for NO_X and PM_{10}. Recommended Mitigation Measures AQ-2a (Implement Basic Construction Emission Control Practices (Best Management Practices, or BMPs) and Enhanced Fugitive Particulate Matter (PM) Dust Control Practices during Construction and Decommissioning), AQ-2b (Reduce Construction Equipment Exhaust-Related Emissions during Construction), AQ-2c (Reduce Haul Truck Trip Exhaust-Related Emissions during Construction), AQ-2d (Submit a Construction Emissions Control Plan), and AQ-2e (Off-site Construction Mitigation) would require enhanced fugitive dust control, employing equipment that meets or exceeds Tier 4 emissions standards along with newer haul trucks, and, as applicable, paying a mitigation fee to offset any constructions emissions that continue to exceed the significance thresholds with mitigation. Implementation of this set of mitigation measures would reduce construction-related air quality impacts to less than significant.

In addition, maintenance activities during operations would exceed the applicable non-zero threshold for particulate matter emissions. Mitigation Measure AQ-2f (Implement Best Management Practices for Reducing Operational PM Emissions) would require the implementation of BMPs (e.g., limit vehicle speeds and idling times), which would reduce operational PM emissions to a less-than-significant level.

Biological Resources

As detailed in the discussion of Impact BR-1 in Chapter 6, ground-disturbing activities during project construction would result in impacts on habitats that are potentially suitable for and/or known to be occupied by special-status plants and wildlife. In addition, noise, vibrations, visual or physical disturbances, and fugitive dust generated during construction or operations could harm or kill special-status plants and wildlife. Accidental spills/leaks from construction- or operations-related equipment use could expose special-status plants and wildlife to harmful pollutants. Construction vehicles and equipment used during construction and operations could introduce weeds that degrade wildlife habitat or compete with special-status plants. Operation of electrical infrastructure could cause injury or mortality of special-status wildlife from collision or electrocution. Impacts on special-status species resulting from project construction, operations and maintenance activities, and decommissioning would be potentially significant.

To avoid and minimize general construction-related impacts on special-status plants and wildlife, recommended Mitigation Measure BR-1a (Implement Construction Best Management Practices to Avoid and Minimize Potential for Construction-Related Impacts on Special-Status Plants and Wildlife) would require that the project applicant and construction contractor implement the Best Management Practices and Avoidance and Minimization Measures from the South Sacramento Habitat Conservation Plan (SSHCP) during project construction and operation. While the project is not a covered activity under the SSHCP, these measures have been identified as appropriate for the project and would allow for a consistent approach to mitigation in the SSHCP area. Example measures include construction fencing, biological monitors, and environmental awareness training of construction staff. Mitigation Measure BR-1b (Avoid, Minimize, and Mitigate for Impacts on Special-Status Plants) would address potential impacts on special-status plants through avoidance and minimization measures such as pre-construction surveys (and subsequent protection of any occurrences identified during the surveys) and development and implementation of a Special-status Plant Compensatory Mitigation Plan if project impacts on special-status plants cannot be avoided. Mitigation Measures BR-1c (Avoid, Minimize, and Mitigate for Impacts on California Tiger Salamander and Western Spadefoot), BR-1d (Avoid, Minimize, and Mitigate for Impacts on Northwestern Pond Turtle), BR-1e (Avoid, Minimize, and Mitigate for Impacts on Western Burrowing Owl and Occupied Nesting Habitat), BR-1f (Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and their Foraging Habitat), BR-1g (Avoid, Minimize, and Mitigate for Impacts on Tricolored Blackbird), BR-1h (Avoid, Minimize, and Mitigate for Impacts on Valley Elderberry Longhorn Beetle and Their Habitat), BR-1i (Avoid, Minimize, and Mitigate for Impacts on Vernal Pool Fairy Shrimp, Vernal Pool Tadpole Shrimp, or Midvalley fairy shrimp), BR-1j (Avoid, Minimize, and Mitigate for Impacts on American Badger), BR-1k (Avoid, Minimize, and Mitigate for Impacts on Bats), BR-1l (Avoid, Minimize, and Mitigate for Impacts on Nesting Raptors and Migratory Birds), BR-1m (Avoid, Minimize, and Mitigate for Impacts on Crotch's Bumble Bee) would implement avoidance and minimization measures to limit impacts on special-status wildlife species; such measures would include construction monitoring, pre-construction surveys, habitat restoration and worker training. With implementation of Mitigation Measures BR-1a through BR-1f, impacts on sensitive species would be less than significant.

Project implementation would result in potentially significant impacts on sensitive natural communities and wetlands, as detailed in Chapter 6 under the discussion of Impact BR-2 and Impact BR-3. Mitigation Measure BR-3 (Avoid, Minimize, and Mitigate for Impacts on State and Federally Protected Wetlands) would provide for avoidance, minimization, and compensation for impacts to wetlands and associated listed branchiopods, which would reduce the impact to less than significant. Potentially significant impacts on wildlife movement or wildlife corridors discussed under Impact BR-4 would be addressed by implementing Mitigation Measures BR-1e (Avoid, Minimize, and Mitigate for Impacts on Western Burrowing Owl and Occupied Nesting Habitat), BR-1f (Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and their Foraging Habitat), and BR-3 (Avoid, Minimize, and Mitigate for Impacts on State and Federally Protected Wetlands) which would retain, restore, and compensate for any losses of grasslands and aquatic features such that local and regional habitat connectivity would be maintained, resulting in a less-

than-significant impact. Finally, potential conflicts with local ordinances are discussed in Impact BR-5, specifically the County's Swainson's Hawk Ordinance. To address this impact, Mitigation Measure BR-1f (Avoid, Minimize, and Mitigate for Impacts on Swainson's Hawk and their Foraging Habitat) would provide compensation for any loss of Swainson's Hawk foraging habitat consistent with the applicable County ordinance standards. With implementation of compensatory mitigation, no-net loss of foraging habitat for Swainson's hawks and other grassland dependent species would occur and therefore no direct impact or cumulative impact would result.

Climate Change

As discussed in Chapter 7 under Impact CC-1, project construction and decommissioning activities are anticipated to exceed the annual threshold established for greenhouse gas (GHG) emissions. Although the construction-related emissions would be offset within the first year of operations through the renewable energy generated by the project, recommended Mitigation Measure CC-1 (Implement Construction GHG Emission Best Management Practices during Construction Activities) would further reduce construction emissions through best management practices that include improved fuel efficiency of construction equipment, training of equipment operators, recycling or salvage of debris, and alternative fuels. With implementation of Mitigation Measure CC-1, this impact would be reduced to less than significant.

Cultural and Paleontological Resources

As detailed in Chapter 8 under Impact CR-2, no potentially sensitive archaeological resources were identified during field efforts in support of the project, which included limited subsurface investigations. However, based on records search results, there is potential for encountering unanticipated significant archaeological resources as a result of ground disturbance during construction and decommissioning. This potentially significant impact would be addressed by implementation of recommended Mitigation Measures CR-1 (Worker Awareness Environmental Program [WEAP] and Archaeological Monitoring) and CR-2 (Cultural Resources and Unanticipated Discoveries), which would reduce any impact to less than significant by training construction staff, stopping work if any resource were discovered and providing appropriate evaluation before continuing, and providing opportunities for monitoring by Native American representatives. Similarly, as discussed in Impact CR-3, while it is not likely that human remains would be encountered, if construction activities resulted in disturbance to any burial sites the impact would be potentially significant. However, compliance with the applicable laws and regulations governing human remains and implementation of Mitigation Measures CR-1 and CR-2 would require that construction activity to cease until the appropriate authorities were contacted (including if applicable Native American representatives) and the resulting recommended treatment measures were implemented. As a result, Impact CR-3 would be less than significant with mitigation.

As described in Impact CR-4 in Chapter 8, the project site is underlain by two paleontologically sensitive rock formations (Riverbank and Mehrten). Therefore, earthmoving activities associated with construction and decommissioning could result in accidental damage to, or destruction of, unknown unique paleontological resources. This

potentially significant impact would be addressed by implementation of recommended Mitigation Measure CR-3 (Avoid Impacts to Unique Paleontological Resources), which would reduce any impact to less than significant by training construction staff; stopping work if any fossil resource were discovered; and retaining a qualified paleontologist (if fossils were encountered) to provide appropriate fossil evaluation, recovery, curation, and potentially additional on-site monitoring. Therefore, Impact CR-4 would be less than significant with mitigation.

Noise

The proposed project may include construction activities outside the hours prescribed by the County Noise Ordinance. As detailed in Chapter 10 under Impact NOI-1, nighttime construction activities have the potential to result in a significant noise impact on nearby sensitive land uses (residences). Mitigation Measure NOI-1 (For Evening and Nighttime Construction, (i.e., outside of permitted construction hours (Section 6.68.090[e] of the County of Sacramento Code), Implement Noise-Reducing Construction Practices and Monitor and Record Construction Noise near Sensitive Receptors) would entail limiting the most noise-intrusive at night (e.g., pile driving), providing sufficient buffering distances between nighttime construction activities and adjacent residences, and using enclosures to reduce noise transmission. With implementation of this mitigation measure, the impact from nighttime construction noise would be reduced to less than significant.

As discussed under Impact NOI-2, operations of the project facilities could result in an exceedance of the applicable noise standards established by Sacramento County. To address this impact, Mitigation Measure NOI-2 (Site Project Facilities Sufficiently Distant to Reduce Operational Noise Levels Below County General Plan Standards) would require the detailed designs reflecting manufacturer's specifications demonstrating that the project facilities would comply with the County's noise standards. As a result, the impact of project operations would be less than significant with mitigation.

Traffic and Circulation

As discussed in Chapter 11 under Impact TC-3, construction of the project facilities would introduce additional traffic movements and oversized haul vehicles to the local road network. Given the scale of the project and rural setting in which the project would be constructed, the temporary addition of oversized vehicles, haul trucks, and worker vehicles could increase traffic hazards. To address this impact, Mitigation Measure TC-1 (Prepare and Implement Traffic Control Plan) would require that the applicant prepare a traffic control plan for review and approval by the County Department of Transportation. As a result, the impact of project operations would be less than significant with mitigation.

Tribal Cultural Resources

As detailed in Chapter 12 under Impact TCR-1, project construction and decommissioning activities have the potential to disturb unanticipated tribal cultural resources (TCRs), which would result in a potentially significant impact. Recommended Mitigation Measures TCR-1a (Inadvertent/Unanticipated TCR Discoveries), TCR-1b (Native American TCR Monitoring), and TCR-1c (Notification and Inspection of Ground Disturbance) would require cessation of ground-disturbing activities if any suspected tribal cultural resources

are discovered; immediate notification of a Native American representative; and implementation of the recommended treatment measures. In addition, Native American representatives would be invited to conduct a pre-construction inspection of the project site and subsequent monitoring of construction activities with the authority to identify resources and request work be stopped. As a result, the potentially significant impact on tribal cultural resources would be reduced to less than significant with mitigation.

Wildfire

As discussed in Chapter 13 under Impact WF-1, construction of the project facilities would introduce additional traffic movements and oversized haul vehicles to the local road network. Without a traffic control plan, the proposed project could result in a potentially significant impact by impairing implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan. To address this impact, Mitigation Measure TC-1 (Prepare and Implement Traffic Control Plan) would require that the applicant prepare a traffic control plan for review and approval by the County Department of Transportation. As a result, the impact of project operations would be less than significant with mitigation. As discussed under Impact WF-2, the installation of the project components in the previously undisturbed agricultural field would introduce structures that could make grazing less efficient and could result in a potentially significant impact if vegetation is not properly maintained on-site in a way that could exacerbate wildfire risk. To address this impact, Mitigation Measure WF-1 (Demonstrate Compliance with the California Fire Code, California Building Code, and Sacramento Metro Fire Department Requirements and Standards, and Manage Vegetation On-site) would require that the applicant incorporate California Fire Code requirements, California Building Code requirements, and Sacramento Metro Fire Department standards into project designs and by requiring that vegetation is managed on-site, particularly during the dry season (May through November). As a result, the impact of project operations would be less than significant with mitigation.

Effects Found Not to be Significant

As provided in the prior chapters of this document, the following environmental topic was the subject of detailed analysis, which determined that implementation of the proposed project impacts that are less than significant.

Hydrology and Water Quality

As discussed in Chapter 9, “Hydrology and Water Quality”, there would be no risk for release of pollutants from inundation in a tsunami, seiche, or flood hazard zone, and there would be no impact. As detailed in the discussion under Impact HWQ-1, with implementation of grading, erosion control, and municipal and industrial stormwater pollutant laws, regulations, and permit conditions; implementation of BMPs related to project construction and operation; and compliance with federal and state programs related to agricultural grazing, the project would not violate water quality standards or substantially degrade surface or groundwater quality and thus, these water quality impacts would be less than significant. As discussed in the discussion under Impact

HWQ-2, a project-specific groundwater sustainability assessment has been prepared, and the results demonstrate that quantity of groundwater use for the proposed project would be substantially lower as compared to historic groundwater withdrawal for crop irrigation, and would not result in land subsidence, substantial reduction in groundwater storage, or substantial declines in groundwater levels, and would not adversely affect nearby groundwater-dependent ecosystems. Therefore, the project would not impede sustainable groundwater management by substantially decreasing groundwater supplies or interfering with groundwater recharge and this impact is considered less than significant. As detailed under Impact HWQ-3, with implementation of grading, erosion control, and stormwater pollutant laws, regulations, and permit conditions, and implementation of BMPs related to agricultural uses, the proposed project would not substantially alter drainage patterns or add impervious surfaces resulting in increased erosion or siltation and this impact would be less than significant.

Preliminary drainage studies have been prepared and accepted by the Sacramento County Department of Water Resources (Baker-Williams Engineering Group 2022a, 2022b). The preliminary drainage studies determined that pre-project and post-project surface water runoff would not change. The project is required to adhere to Sacramento County storm drainage requirements including water quality features as specified in the *Sacramento Region Stormwater Quality Design Manual* (Sacramento County et al. 2018). As concluded under Impact HWQ-4, the preliminary drainage studies related to construction and operational stormwater drainage effects on hydrology and hydraulics (flooding), and which include water quality features as required by the County, have been performed. Furthermore, per Sacramento County requirements, a detailed final drainage study would be performed and provided to the County for approval when improvement plans are submitted, and prior to issuance of any construction permits. Therefore, impacts related to alteration of drainage patterns or the addition of impervious surfaces that would exceed storm drainage systems, substantially degrade water quality, result in increased flooding, or impede or redirect flood flows would be less than significant. As discussed under Impact HWQ-5, development of the proposed project would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, and this impact would be less than significant. Additionally, the proposed project would not conflict with or obstruct implementation of the *Groundwater Sustainability Plan for the Cosumnes Subbasin* (EKI 2021). Therefore, this impact would be less than significant.

The topic areas listed below were analyzed in accordance with Appendix G of the California Environmental Quality Act (CEQA) Guidelines (California Code of Regulations Section 15000 et seq.). The impact analysis that follows specifically addresses each applicable environmental checklist item from Appendix G of the CEQA Guidelines to determine the proposed project's impacts. As presented in the sections that follow, the analysis determined that the proposed project would result in less than significant impacts or no impacts on the environment for the following resource topics.

- Energy
- Geology, Seismicity, and Soils

- Hazards and Hazardous Materials
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems

ENERGY

Based on Appendix G of the CEQA Guidelines, an impact related to energy is considered significant if the proposed project would do any of the following.

1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

   Construction of the proposed project would result in the consumption of energy in the form of transportation fuels (diesel and gasoline) during the construction phase. Fuel consuming activities would include the use of heavy-duty construction equipment, vendor and haul truck trips for materials transport, and worker commute trips to and from the project site. Table SI-1 summarizes the estimated construction-related energy consumption that would occur over the anticipated construction duration.

Table SI-1. Construction-Related Energy Consumption

Fuel Type	Total Fuel Usage (gallons)	Annual Fuel Usage[1] (gallons)	Energy Consumption (MMBtu)
Diesel	185,186	5,291	852
Gasoline	55,903	1,597	233

Source: Estimated by AECOM in 2022 using the GHG emissions presented in Appendix AQ-1. See Appendix AQ-1 for detailed methodology and calculations.
Notes:
MMBtu/year = million British thermal units per year
[1] Since construction-related energy demand would cease upon completion of construction, energy demand associated with construction of the proposed project was amortized over the project lifetime of 35 years.

   Fuel consumption rates would vary over the construction duration depending on the intensity of construction-related activities in terms of amount and duration of equipment use and number of vehicle trips serving each particular construction phase. The proposed construction-related activities and associated equipment use are considered to be necessary components of the construction phase of the project. Related fuel consumption and electricity use would be temporary, ceasing after the completion of construction, and would not represent a significant demand on available fuel, beyond normal construction fuel usage. In addition, the construction contractor would be required, in accordance with recommended Mitigation Measure CC-1 (Implement Construction GHG Emission Best Management Practices during

Construction Activities, see Chapter 7, “Climate Change”) and the California Air Resources Board Airborne Toxic Control Measure for Diesel-Fueled Commercial Motor Vehicle Idling, to minimize the idling time of construction equipment by shutting equipment off when it is not in use or reducing the idling time. Per Mitigation Measure CC-1, construction contractors would also be required to maintain and properly tune all construction equipment in accordance with the manufacturer’s specifications as well as use the proper size of equipment for the job, which would limit wasteful and unnecessary energy consumption. Based on these considerations, construction of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources.

Once constructed, the proposed project would provide a photovoltaic (PV) solar power and battery energy storage facility that would provide new power production capacity of up to 50 megawatts (MWs). Operational and maintenance activities associated with the proposed project would include up to ten daily vehicle trips, which could be diesel, gasoline, or electric-powered vehicles, to the project site. As detailed in Table SI-2, such activities could result in the consumption of up to 16 gallons of diesel and 1,079 gallons of gasoline per year; these totals represent a conservative worst-case year of vehicle and equipment use reflective of maximum daily operations and maintenance requirements, and typical annual vehicle trips and equipment use would be much lower. Based on the size of the battery energy storage building, it is estimated that the electricity consumption associated with the battery energy storage facility would be approximately 508,000 kilowatt-hours per year. These operational and maintenance activities are considered necessary for the efficiency and reliable operations of the proposed facilities. In addition, the proposed project would increase the region’s overall power generation capacity and portfolio of eligible renewable resources contributing to its overall power mix. When considered in the context of the proposed renewable resource power that would be generated as a result of the proposed project, the project would generate much more energy than would be required to run the operations and maintenance components of the proposed operations.

Table SI-2. Operational Energy Use and Generation

Energy Consuming Source	Energy Requirement	Unit	Annual Energy Consumption (MMBtu)
Building Operations (Electricity Consumption)	508,000	kWh/year	1,733
Operational and Maintenance Trips - Diesel	16	gallons/year	2
Operational and Maintenance Trips - Gasoline	1,079	gallons/year	135
Operational and Maintenance Trips - Electricity	6	kWh/year	0.02

Source: Estimated by AECOM in 2022 using the information presented in Appendix AQ-1. See Appendix AQ-1 for detailed methodology and calculations.

Notes:

MMBtu/year = million British thermal units per year; kWh/year = kilowatt-hours per year; gallons/year = gallons per year.

The project is anticipated to be decommissioned after approximately 35 years of operations. Energy consumed during project decommissioning would be roughly proportionate to the amount consumed during project construction activities. However, future decommissioning activities are likely to employ more efficient equipment compared to construction activities due to increasingly stringent regulatory requirements and the associated improvements in technology and efficiency over time. Moreover, decommissioning would occur in a manner that maximizes recycling of project components and allows for a return of the project site to productive agricultural uses. As a result, decommissioning of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources.

In summary, although project implementation would result in net energy consumption associated with the construction phase of the project, as well minor fuel consumption to support operational and maintenance activities, such activities are necessary and would be conducted in an efficient manner. In addition, once operational, the project's ultimate purpose as a power generation facility would increase the region's renewable power resources and overall generation capacity, resulting in a net increase in energy resources. Consistent with the goals included in Appendix F of the CEQA Guidelines, the proposed project would contribute to the overall goal of decreasing reliance on fossil fuels and increasing reliance on renewable energy sources. Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy, and this impact would be **less than significant**.

2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

   The federal government, the state, and local jurisdictions have policies, regulations, and plans established to promote renewable energy and energy efficiency.

   Senate Bill (SB) 100 requires all electricity retailers in the state, including publicly-owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators, to achieve Renewable Portfolio Standards of 60 percent renewable energy by 2030 and requires that all of the state's electricity come from carbon-free resources by 2045. The proposed project would provide a source of renewable energy to achieve the Renewables Portfolio Standards' target of 60 percent by 2030 set by SB 100 and help the state reach its goal to be carbon neutral by 2045, as well as contribute toward the County's General Plan and Final Draft Climate Action Plan (Sacramento 2022) goals of reducing the reliance on non-renewable energy sources and supporting the development and use of renewable sources of energy, including, but not limited to, solar.

   Furthermore, the proposed project supports the County's General Plan Energy Element (Sacramento 2017) goal of shifting toward a greater share of renewable sources of energy and action measures of utilizing solar energy systems within the Sacramento area. Therefore, the proposed project would not obstruct a state or local plan for renewable energy or energy efficiency, and this impact would be **less than significant.**

As discussed in Chapter 14, the Alternative 1 site footprint would be slightly smaller compared to the proposed project and would result in fewer vehicle trips due to the elimination of the off-haul of material during site grading activities. Alternative 1 would be subject to the same mitigation measures, permits, regulations, and recommendations as the proposed project. For the reasons described above for the proposed project, the impacts listed in this section related to energy would also be **less than significant** for Alternative 1.

Geology, Seismicity, and Soils

Based on Appendix G of the CEQA Guidelines, an impact related to geology, seismicity, and soils is considered significant if the proposed project would do any of the following.

1. 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 or based on other substantial evidence of a known fault, strong seismic ground shaking, liquefaction, or seismically-induced landslides.

   The project site is located along the western margin of the Sierra Nevada and the eastern margin of the Sacramento Valley (Wagner et al. 1981); this area historically has not been seismically active. The nearest active faults, including those that are classified under the Alquist-Priolo Earthquake Fault Zone Act, are approximately 50 miles west in the Coast Ranges and approximately 60 miles northeast near Lake Tahoe (Jennings and Bryant 2010, California Geological Survey 2021). The nearest known fault is the Bear Mountain Fault Zone, approximately 13.5 miles east of the project site, which is not classified as “active” (Jennings and Bryant 2010). Therefore, hazards from surface fault rupture and strong seismic ground shaking are unlikely. The project site is situated on gently rolling land. However, there are some areas of steeper slopes where cuts up to 15 feet would be necessary to modify slopes and accommodate the proposed solar arrays (Baker-Williams Engineering Group 2021). However, since the potential for strong seismic ground shaking is low, seismically-induced landslides would not represent a hazard. Based on a review of the *Preliminary Geotechnical Engineering Report* (Terracon 2020) prepared for the proposed project, the project site is unlikely to experience hazards from liquefaction, because of the anticipated depth to groundwater and the relatively stiff/dense subsurface soils. Therefore, these impacts would be **less than significant**.

2. Result in substantial soil erosion or the loss of topsoil.

   Project-related construction would involve earthmoving activities, including excavating, grading, and drilling for pier foundations. A total of 78,000 cubic yards of excess grading material would be removed from the project site. Soil disturbance during construction activities would increase the potential for erosion, particularly during the winter rainy season. However, the project applicant is required to comply with the County’s Land Grading and Erosion Control Ordinance (Sacramento County Municipal Code Chapter 16.44). Because the project would involve clearing and grubbing more than one acre of land, a grading permit is required for compliance with

the ordinance. As part of the permit application, plans must be submitted to the County showing the location, implementation schedule, and maintenance schedule of all erosion control measures and sediment control measures to be implemented or constructed prior to, during, or after the proposed activity (Municipal Code Section 16.44.090). Furthermore, because the proposed project would disturb more than one acre of land, the project applicant is required by law to prepare a Stormwater Pollution Prevention Plan (SWPPP) and implement site-specific Best Management Practices (BMPs) specifically designed to prevent erosion and downstream sedimentation, and to protect water quality. The SWPPP and BMPs must be submitted to the Central Valley Regional Water Quality Control Board (RWQCB), in compliance with the statewide *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit) (Order WQ 2022-0057-DWQ, NPDES Permit No. CAS000002). Therefore, this impact would be **less than significant**.

3. 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.

   Although there are some sloped areas where cuts up to 15 feet would be necessary to create benches for the solar arrays, the necessary cuts and fills would be placed to generally follow the existing land contours and would be engineered according to standard civil and geotechnical engineering practices. In addition, the earthmoving activities would be subject to review pursuant to the County Land Grading and Erosion Control Ordinance. As a result, landslides would not represent a hazard. However, unstable soil conditions could be present during construction in the winter rainy season, including subsidence and liquefaction from heavy equipment working on soils with a low bearing strength on top of shallow, perched groundwater during the winter. To address this, the County would ensure that recommendations contained in the geotechnical report to reduce hazards from unstable soils (which could include cessation of earthmoving activities during periods of heavy rain, and parking heavy equipment in areas that are not subject to perched groundwater) are implemented through review of project plans and on-site inspections. Therefore, this impact would be **less than significant**.

4. Be located on expansive soil, creating substantial direct or indirect risks to life or property.

   Some of the Terracon (2020) soil borings encountered clayey soils with moderate expansion potential. However, the County would require that recommendations contained in the geotechnical report to reduce hazards from expansive soils (e.g., soil treatment with lime, installing solar piers on drilled pier foundations) are implemented through the review of project plans and associated on-site inspections. Therefore, this impact would be **less than significant**.

5. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

   The proposed project would not include the construction of permanent restroom facilities. If the applicant determines a small on-site septic system would be required for restroom facilities at a later date, the applicant would be required to follow the County Department of Environmental Management's (2021) septic system permitting process, which, at the project site, would require a site-specific soils investigation, the results of which would be used to inform an engineered septic design that meets County requirements to protect human health and the environment. Therefore, this impact would be **less than significant**.

Potential impacts to unique paleontological resources are evaluated in Chapter 8, "Cultural and Paleontological Resources".

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site. Therefore, the Alternative 1 site is composed of the same soils and geologic formations as the proposed project. Alternative 1 would have a balanced volume of cut and fill material during site grading, there would be no import or export of grading material required. Alternative 1 would be subject to the same permits, policies, regulations, and recommendations as the proposed project, including but not limited to, complying with the County's Land Grading and Erosion Control Ordinance and implementing a SWPPP and BMPs in compliance with the statewide NPDES permit. For the reasons described above for the proposed project, the impacts listed in this section related to geology, seismicity, and soils would also be **less than significant** for Alternative 1.

Hazards and Hazardous Materials

Based on Appendix G of the CEQA Guidelines, an impact related to hazards and hazardous materials is considered significant if the proposed project would do any of the following.

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

   Project-related construction activities would involve the use, temporary storage, and transport of small amounts of hazardous substances used during, such as fuels, lubricants, oils, and paint. All materials must be used and stored in compliance with federal, state, and local ordinances, laws, regulations, and policies related to hazardous materials, including the County's requirements for handling and transport of hazardous materials. None of the substances used on-site would be acutely hazardous. The proposed project would not include any usual conditions related to use, storage, or transport of hazardous materials such that an increased likelihood for accidental spills would occur. Furthermore, because the proposed project would disturb more than one acre of land, the project applicant is required by law to develop and implement a SWPPP, which must contain provisions for notification and proper

cleanup of spills if they do occur. Therefore, these impacts would be **less than significant**.

2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment.

   The results of the Phase I Environment Site Assessment (ESA) (Dudek 2020) prepared for the project site indicated that residences, storage sheds, and dairy farming structures are present at the project site, along with abandoned dairy farming facilities (including a cattle facility, storage sheds, feed silos, and hay barns), and vehicle/equipment storage sheds. Several residential structures were removed from the project site in the past, but the concrete pads from those structures are still present. An empty 500-gallon above-ground diesel fuel storage tank (inactive) and a 1,000-gallon above-ground diesel fuel tank in active use are also present. Six groundwater wells are present on the project site (Dudek 2021), along with several pole-mounted electrical transformers. A septic system and septic tank are present to serve the existing residence. Based on the age of the dairy building and house (pre-1970), asbestos and lead-based paint may be present. Proposed facilities would be installed in an area with a history of agricultural operations; however, the project site has historically been used for grazing, not for orchards or row crops where agricultural fertilizers and pesticides are more likely to persist in the soil over time. The Phase I ESA did not identify any recognized environmental conditions that could represent a hazard. If stained or odiferous soils or groundwater were encountered during project-related construction activities, the project applicant would investigate as required by federal, state, and local laws, regulations, and policies, and the landowner would be required to implement remedial activities. Demolition of structures containing asbestos and lead-based paint is regulated by the Sacramento Metropolitan Air Quality Management District. The construction contractor is required by law to follow all local, state, and federal regulations related to abatement of asbestos and lead-based paint, along with the provision of personal protective equipment for workers. Septic systems, and any groundwater wells that would not be used in the future, must be abandoned in accordance with County requirements. Therefore, this impact would be **less than significant**.

3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

   There are no schools within 0.25 mile of the project site. Thus, there would be **no impact**.

4. 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.

   There are no known open or closed hazardous materials sites listed under Section 65962.5 of the Government Code (i.e., the Cortese List), within 0.5 mile of the project

site (Dudek 2020, California Department of Toxic Substances Control [DTSC] 2021, State Water Resources Control Board [SWRCB] 2021). Thus, there would be **no impact**.

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.

   The potential for the proposed solar panels at the project site to result in glare, which could in turn affect operational aircraft safety in the air, is evaluated in Chapter 3, "Aesthetics".

   Mather Airport is approximately 7.3 miles northwest of the project site. The northwest corner of the project site is adjacent to, but just outside of, the boundaries of the Mather Airport Land Use Compatibility Plan Airport Influence Area, Review Area 2. The project site is not within or near the airport noise contours. Given this distance and the lack of tall facilities or other features at the project site (not including glare) that could represent a safety hazard, there would be **no impact** related to Mather Airport.

   There are also two smaller local airports in the project vicinity: Rancho Murieta Airport (approximately 3.5 miles to the northeast), and the Sky Way Estates Airport (approximately 4.6 miles to the southwest). Since the proposed project consists of a solar power generating station, it would not concentrate large numbers of people near an airport runway and would not involve the creation of large new stormwater retention ponds that could increase the potential for birdstrikes. The Rancho Murieta Airport and the Sky Way Estates Airport do not have Comprehensive Land Use Plans. Land use compatibility for the Rancho Murieta Airport is determined by the Sacramento Airport Land Use Commission (ALUC) Airport Land Use Policy Plan (Sacramento ALUC 1992). Noise contours for the Rancho Murieta Airport are concentrated close to the runway because the total number of yearly flights is low and generally consist of small planes that generate less noise (Sacramento County Department of Planning and Environmental Review 2014). Based on a review of the Sacramento Airport Land Use Policy Plan (Sacramento ALUC 1992) and the California Airport Land Use Planning Handbook (Caltrans Division of Aeronautics 2011), the proposed project does not represent an airport noise hazard or safety hazard (not including glare) on the ground. Therefore, this impact would be **less than significant**.

6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

   The Sacramento County *Operational Area Evacuation Annex* (Sacramento County Office of Emergency Services 2018) provides evacuation strategies that would be implemented in an affected area, including public alerts and warnings, transportation, and evacuation triggers. The Annex outlines local government (Cities and Special Districts), the Sacramento Operational Area, and State responsibilities for

management of evacuation during an emergency situation. Organizations, operational concepts, responsibilities, and a documented process to accomplish an evacuation are defined within the Annex.

In the event of an emergency, Dillard Road and State Route 16 would be used as evacuation routes. All project-related construction materials, equipment, and personnel would be staged on the project site. All emergency ingress and egress routes on the surrounding roadways would remain open and during both construction and operation. Moreover, as provided for under Chapter 11, "Traffic and Circulation", project construction would be required to include preparation and implementation of a traffic control plan during construction to help ensure safe and efficient movement of traffic in the affected area. Therefore, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and the impact would be **less than significant**.

7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

   Issues related to wildland fire are evaluated in Chapter 13, "Wildfire".

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site. Therefore, the Alternative 1 site is composed of the same soils and geologic formations as the proposed project and the results of the Phase I ESA for the proposed project would apply to the Alternative 1 site. Alternative 1 would be subject to the same permits, policies, regulations, and recommendations as the proposed project, including but not limited to, complying with the County's Land Grading and Erosion Control Ordinance, implementing a SWPPP and BMPs in compliance with the statewide NPDES permit, and implementing a traffic control plan during construction. For the reasons described above for the proposed project, the impacts listed in this section related to hazards and hazardous materials would also be **less than significant** for Alternative 1.

Mineral Resources

Based on Appendix G of the CEQA Guidelines, an impact related to mineral resources is considered significant if the proposed project would do any of the following.

1. 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.

   The project site is included in several mineral land classification reports prepared for Sacramento County (Dupras 1999, O'Neal and Gius 2018). The California Geological Survey (CGS) has classified nearly the entire project site as MRZ-3—areas containing known or inferred concrete aggregate resources of unknown significance. A very small area along the southern project site boundary is classified as MRZ-1, areas where available geologic information indicates that little likelihood exists for the presence of significant concrete aggregate resources (O'Neal and Gius 2018). The nearest known kaolin clay deposits are approximately 15 miles east of the project site, near Plymouth (Dupras 1999). The project site is not designated by CGS as a regionally important

mineral resource recovery area (i.e., an area classified as "MRZ-2") (Dupras 1999, O'Neal and Gius 2018), and has been used for livestock grazing for the last 100 years. Soil borings obtained for the project's *Preliminary Geotechnical Engineering Report* (Terracon Consultants, Inc. 2020) indicate that the project site is composed of silty sand, sandy silt, and sandy clay. Based on these results, there are no substantially large enough clean layers of sand or gravel that would make mining at the project site an economically viable operation. Therefore, the development of the proposed project would not result in the loss of availability of a regionally important mineral resource, and there would be **no impact**.

2. 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.

   Sacramento County has adopted the same classifications as CGS related to mineral land classification within the County boundaries (Sacramento County 2017). As described above, the mineral land classifications on the project site are MRZ-3 and MRZ-1. Therefore, for the same reasons provided above, implementing the proposed project would not result in the loss of availability of a locally important mineral resource recovery site delineated in a local plan, and there would be **no impact**.

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site. Therefore, the Alternative 1 site is composed of the same soils and mineral land classification designations as the proposed project. For the reasons described above for the proposed project, the impacts listed in this section related to mineral resources would also be **no impact** for Alternative 1.

Population and Housing

Based on Appendix G of the CEQA Guidelines, an impact related to population and housing is considered significant if the proposed project would do any of the following.

1. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

   The proposed project would not directly or indirectly induce substantial unplanned population growth in Sacramento County. The project does not propose development of additional housing or commercial or industrial businesses that could induce population growth, nor would it remove any obstacle to population growth. Typical growth-inducing factors might be the extension of urban services or transportation infrastructure to a previously unserved or underserved area, or the removal of major barriers to development from construction of utility infrastructure. The applicant has entered into an agreement to supply the Sacramento Municipal Utility District (SMUD) with the renewable energy generated by the project and would make use of existing electricity transmission lines adjacent to the project site. The proposed project is anticipated to fulfill existing energy demands and would not result in the establishment of electrical service to currently unserved areas (see below for the Growth Inducement section that provides further discussion of growth-inducing impacts).

Construction of the proposed project would occur over approximately eight months, beginning in 2023. The number of workers expected on-site during construction of the proposed project would vary over the construction period and would average 150 workers per day. Decommissioning and site restoration activities are expected to require a similar workforce as construction and occur over 12 months. The source of the construction labor force is unknown at this time, but the majority of workers would be expected to come from the local labor pool and not relocate from other areas for the relatively short construction period. The U.S. Census Bureau estimates that in 2020 there were 47,711 persons employed in the construction industry in Sacramento County (U.S. Census Bureau 2020). Given the size and proximity of the existing labor pool of nearby construction workers and the temporary construction period, project construction would not cause a substantial influx of construction personnel that would result in unplanned population growth. This also applies to project decommissioning, which would require a similarly sized labor force. Upon completion of construction, the facility would be primarily operated remotely through a local solar operations and maintenance company, facilitated by the project Supervisory Control and Data Acquisition system. Therefore, the proposed project would not directly or indirectly induce substantial unplanned population growth in an area, and **no impact** would occur.

2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

   One occupied residence would be demolished within the project site. Therefore, the proposed project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere; therefore, **no impact** would occur.

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. Alternative 1, like the proposed project, would fulfill existing energy demands and would not result in establishing electrical service to currently underserved areas. The construction period and construction workforce are anticipated to be the same as the proposed project and would not displace substantial numbers of existing people or housing. For the reasons described above for the proposed project, the impacts listed in this section related to population and housing would also be **no impact** for Alternative 1.

Public Services

Based on Appendix G of the CEQA Guidelines, an impact related to public services is considered significant if the proposed project would do any of the following.

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

FIRE PROTECTION

The Sacramento Metropolitan Fire District (Metro Fire) provides fire protection services to the project site and surrounding area. As discussed in Chapter 13, "Wildfire", the proposed project would incorporate California Fire Code, California Health and Safety Code, and California Public Resources Code (PRC) requirements into facility designs. Typical fire and safety precautions would be taken, such as prohibiting on-site fires; reporting any fires, even if they have been extinguished; maintaining access to emergency vehicles; maintaining vehicles in good working order; and maintaining access to fire hydrants, emergency water tanks, and emergency turnouts. Federal and State Occupational Health and Safety Administration regulations would be adhered to during construction in order to minimize the likelihood of workplace injuries and accidents requiring emergency medical attention. Incorporation of all State and local requirements into project designs would reduce the dependence on Metro Fire equipment and personnel by reducing fire hazards and reducing the potential for workplace accidents.

Increases in long-term demand for fire protection services typically are associated with substantial permanent increases in population. Under the proposed project, the population in the project area would not increase as a result of new housing or employment opportunities. Therefore, the proposed project would not require new fire protection facilities or the expansion of existing fire protection facilities to maintain acceptable service ratios, response times, or other performance objectives for fire protection services. **No impact** would occur.

POLICE PROTECTION

The project site is within the service area of the Sacramento County Sheriff's Department Central Division, which provides law enforcement services for the unincorporated areas of southern Sacramento County, the Delta, and Galt, as well as Rancho Murieta, Herald, Wilton, Walnut Grove, and the city of Isleton (Sacramento County Sheriff's Department 2022). It is not anticipated that the proposed project would result in a substantial increase in the demand for police protection services. Typical crime and safety issues during construction and operation could include trespassing, theft of materials, and vandalism. Access would be controlled through security gates at several entrances. To ensure the safety of the public and the facility and minimize the potential for assistance from the Sacramento County Sheriff's Department, the property would be fenced and high-voltage warning signs posted. The fence would be monitored periodically to detect any intrusion into the property.

Under the proposed project, the population in the project area would not increase as a result of new housing or employment opportunities; therefore, the proposed project would not require additional Sacramento County Sheriff's Department staffing to maintain the officer-to-population service ratio or response times. Thus, the proposed project would not affect the Sacramento County Sheriff's Department performance objectives and would not result in the construction of new police protection facilities or the expansion of existing police protection facilities. **No impact** would occur.

SCHOOLS

The proposed project would not result in new housing that would generate new students or increase the demand for school services and facilities. Therefore, **no impact** would occur.

PARKS

The population in the project area would not increase as a result of new housing or employment opportunities. Therefore, the proposed project would not require construction of new parks to meet Sacramento County parkland standards. **No impact** would occur.

OTHER PUBLIC FACILITIES

The population in the project area would not increase as a result of new housing or employment opportunities. Therefore, the proposed project would not increase demand for other public facilities. **No impact** would occur.

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. The construction period and construction workforce for Alternative 1 would be similar to the proposed project. As discussed above in the Population and Housing section, the development of Alternative 1 would not result in an increase in population or housing. Similar to the proposed project, the facility would primarily be operated by remote technology and would not employ a large number of people such that additional public services would be required. For the reasons described above for the proposed project, the impacts listed in this section related to public services would also be **no impact** for Alternative 1.

RECREATION

Based on Appendix G of the CEQA Guidelines, an impact related to recreation is considered significant if the proposed project would do any of the following.

1. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

   The proposed project would not result in a net increase of residents within the area. Thus, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. In addition, there are no recreational facilities within the project vicinity. Thus, there are no parks whose access would be restricted or affected in any way during construction or operation of the proposed project, thereby leading the increased use and subsequent accelerated physical deterioration of other parks within the area. Therefore, the proposed project would not result in a substantial increase in the existing demand for parks and other recreational facilities and **no impact** would occur.

2. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

   The proposed project would not include the construction of any recreational facilities. In addition, the proposed project would not result in population growth within Sacramento County, and therefore, would not generate increased demand for recreation facilities. Therefore, the proposed project would not require the construction or expansion of recreational facilities and **no impact** would occur.

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. The construction period and construction workforce would be similar to the proposed project. Similar to the proposed project, the facility would primarily be operated by remote technology and would not employ a large number of people such that additional or expanded recreational facilities would be required. Like the proposed project, Alternative 1 does not include the construction of any recreational facilities. For the reasons described above for the proposed project, the impacts listed in this section related to recreation would also be **no impact** for Alternative 1.

Utilities and Service Systems

Based on Appendix G of the CEQA Guidelines, an impact related to utilities and service systems is considered significant if the proposed project would do any of the following.

1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

   Water Supply

   All of the water for the proposed project would come from on-site groundwater, likely from the largest primary agricultural irrigation well located in the center of the project site (see discussion under Item 2, below). No new wells or transmission pipelines would be constructed as part of the proposed project. The proposed project would not require or result in the relocation or construction of new or expanded water treatment facilities. Please see Chapter 9, “Hydrology and Water Quality”, of this document for the additional analysis related to water supply.

   Wastewater Facilities

   The proposed project would not include the construction of permanent restrooms. The proposed project would not require or result in the relocation or construction of new or expanded wastewater collection, conveyance, or treatment facilities.

   Stormwater Drainage

   On-site drainage facilities would be required in order to comply with County and Central Valley RWQCB requirements to appropriately retain/detain stormwater runoff.

Please see Chapter 9, "Hydrology and Water Quality", of this document for the analysis related to stormwater drainage.

ELECTRIC POWER

The proposed project is a solar facility that would include arrays of solar PV modules and support structures, inverters to convert direct current electricity to alternating current electricity, power transformers, an on-site substation and switchyard, battery energy storage facilities, and a gen-tie line to generate and distribute up to 50 MW of electricity. Permanent electrical service for lighting would be provided by SMUD.

The proposed gen-tie would connect from the substation switchgear to the existing SMUD regional distribution facilities located along Dillard Road and adjacent to the existing solar facilities and proposed substation. Due to the proximate siting of the proposed substation and point of interconnection, limited gen-tie facilities would be required. However, an existing power line adjacent to the existing solar facilities at the southeast portion of the project site would be relocated to accommodate the proposed solar arrays.

TELECOMMUNICATIONS FACILITIES

The project would utilize telephone and internet services provided via overhead or underground lines, microwave tower, or via cellular service obtained from a local provider. The communication system may include above or below ground fiber optic cable. No relocations of existing telecommunication structures would occur.

CONCLUSION

The proposed project would not include new development that requires new or expanded water, wastewater treatment, or natural gas facilities. Construction of the on-site drainage system and electrical and telecommunications facilities would result in physical environmental impacts that are addressed in each technical section of this document, as appropriate. Where development of the proposed project would result in potentially significant or significant environmental impacts, mitigation measures are identified to reduce those impacts to less-than-significant levels. There are no additional potentially significant or significant impacts associated with construction of the proposed project beyond those comprehensively considered throughout the other sections and chapters of this document. Therefore, impacts related to relocation of or new or expanded utility infrastructure would be **less than significant**.

2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

   The project site has been used for rangeland since at least 1937. Additionally, row crops (i.e., alfalfa hay) and irrigated pasture to support cattle grazing have been grown in last the last 10 years. A center-pivot irrigation system is estimated to have used 68 acre-feet per year (AFY) of extracted groundwater to irrigate 90 acres. There are six existing groundwater wells on the site, one of which is associated with an existing residence that would be removed as part of the proposed project. All of the water for

the proposed project would come from on-site groundwater, likely from the largest primary agricultural irrigation well located in the center of the project site.

A water supply assessment (WSA) was prepared by Dudek (2022) for the proposed project to determine whether the projected available water supplies would meet the proposed project's water demand (Appendix HWQ-1).[1] In estimating the effects of groundwater supplies for the proposed solar facilities, Dudek evaluated the potential reduction of groundwater storage from the solar facilities' construction, operational, and decommissioning phases, as amortized for the 20-year period required by SB 610, and the 35-year project life, compared to the existing groundwater storage underlying the project site.[2] The proposed project would require groundwater for use during construction, operations, and decommissioning, as shown in Table SI-3.

Table SI-3. Groundwater Demand for Proposed Solar Facilities

Time Period	Estimated Water Demand
Construction (8 months)	178 AF
Operation and Maintenance (35 years)	30 AFY
Decommissioning Phase (1 year)	178 AF
Total Project Water Demand	1,348 AF
Total Solar Facilities Water Demand Amortized Over 20 Years[1]	37.4 AFY
Total Solar Facilities Water Demand Amortized Over 35-Year Project Life	38.5 AFY

Notes:

[1] Based on the 20-year timeframe specified by SB 610; does not include decommissioning water demand since the solar facilities would still be operational at the end of that time.

Source: Dudek 2022

As shown in Table SI-3, the proposed solar facilities would require a total of 1,348 AF of groundwater over the projected 35-year project life. Averaged over the 35-year project life, the proposed solar facilities would require approximately 38.5 AFY of groundwater, as compared to approximately 68 AFY of groundwater used for previous agricultural operations.

[1] The State of California has enacted legislation that is applicable to the consideration of larger projects under CEQA. SB 610 (Chapter 643, Statutes of 2001; Section 21151.9 of the California Public Resources Code and Section 10910 et seq. of the California Water Code) requires the preparation of "water supply assessments" (WSAs) for large developments. The proposed project satisfies the statutory definition of a "project" for the purpose of determining SB 610 applicability because it is considered an industrial facility in excess of 40 acres in size, per 10912(a)(5) of the California Water Code.

[2] Section 10910(c)(4) of the California Water Code states the water assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

Modeling results indicated that the maximum groundwater drawdowns would be small, and therefore groundwater use for the proposed project would not cause a substantial decline in groundwater levels or affect groundwater supplies to meet demand of existing uses (see Appendix HWQ-1 as well as Impact HWQ-2, in Chapter 9, "Hydrology and Water Quality", for a detailed summary of groundwater modeling conducted by Dudek for the proposed project). Therefore, the WSA concluded that the 38.5 AFY of groundwater use for the proposed project would not substantially contribute to groundwater overdraft and would not substantially impede sustainable groundwater management of the Cosumnes Subbasin (see Chapter 9, "Hydrology and Water Quality", for a detailed discussion of groundwater sustainability and recharge in the Cosumnes Subbasin). Thus, the WSA concluded that sufficient groundwater supplies to serve the proposed project, in addition to existing and planned development would be available under normal, single-dry, and multiple-dry years (Dudek 2022), and this impact would be **less than significant**.

3. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments.

   The proposed project would be operated remotely, with no dedicated on-site staff. The proposed project would not include construction of permanent restrooms for use of employees during the project's operational phase. Therefore, the proposed project would not result in a determination that a wastewater treatment provider has inadequate capacity to serve the project's demand in addition to the provider's existing commitments. **No impact** would occur.

4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

   Construction of the proposed project would result in site clearing; demolition of the existing farmstead structures and the abandoned dairy farming facilities (i.e., cattle facility, storage sheds, feed silos, and hay barns); and generation of various construction-period wastes, cardboard, wood pallets, copper wire, scrap metal, common trash, and wood wire spools. In addition, approximately 78,000 cubic yards of excess grading material would require off-site disposal. Preliminarily, the Ward Borrow site has been identified as a suitable location for disposal of the excess grading material. The Ward Borrow site is located approximately six miles east of the project site and is a permitted and approved mining operation authorized through California Dept of Conservation, Division of Mine Reclamation. Cal Mine ID 91-34-0059 (Baker-Williams Engineering Group 2022).

   The California Green Building Standards Code (CALGreen) (Title 24, Part 11 of the California Code of Regulations) requires all construction contractors to reduce

construction waste and demolition debris by 65 percent.[3] Code requirements include preparing a construction waste management plan that identifies the materials to be diverted from disposal by efficient usage, recycling, reuse on the project, or salvage for future use or sale; determining whether materials would be sorted on-site or mixed; and identifying diversion facilities where the materials collected would be taken. The code also specifies that the amount of materials diverted should be calculated by weight or volume, but not by both. In addition, CALGreen requires that 100 percent of trees, stumps, rocks, and associated vegetation and soils resulting primarily from land clearing be reused or recycled.

In addition, Sacramento County requires construction contractors to comply with its Construction and Demolition Debris Program (Article 6, Chapter 6.20 of the Sacramento County Code). Under this program, as part of a building permit application, project applicants must complete a waste management plan that identifies the types of waste materials; the manner in which debris would be managed on-site; the volume of construction/demolition debris that would be recycled, sent to a landfill, or reused; how the materials would be transported (i.e., franchised hauler, independent recycler, or self-hauling); and the County-certified receiving and sorting facility that would be used.

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 and transported to a licensed off-site landfill or recycling facility for disposal.

At the end of the project's operational life, decommissioning would occur in accordance with Sacramento County's decommissioning requirements as documented in an approved decommissioning plan. Project components that are no longer needed would be removed from the site and recycled or abandoned in place for all underground conductors. The majority of glass and steel would be processed for transportation and delivery to an off-site recycling center. All steel, aluminum, and copper would be recycled, and panels would be recycled in accordance with the PV manufacturer recycling program. The concrete to a minimum of 12 inches below grade, foundation, and parking area would be broken up and removed from the site to an appropriately licensed disposal facility. Transformers using insulating oils would be removed from the site and recycled or disposed of at an appropriately licensed disposal facility. Similar to construction, contractors would be required to comply with the most recently adopted CALGreen standards and Sacramento County Code.

The Florin-Perkins Public Disposal Transfer/Processing Facility, Sierra Waste Recycling and Transfer Station, and L and D Landfill have been certified as Construction and

[3] The most recent standards included California Green Building Standards Code (CALGreen Code) (Title 24, Part 11 of the California Code of Regulations) became effective on January 1, 2020. The CALGreen Code was developed to enhance the design and construction of buildings, and the use of sustainable construction practices, through planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental air quality (California Building Standards Commission 2019).

Demolition Debris Sorting Facilities by Sacramento County (Sacramento County 2022). Both the Florin-Perkins Public Disposal Transfer/Processing Facility and Sierra Waste Recycling and Transfer Station have maximum permitted throughputs of 1,000 tons per day, and the L and D Landfill Transfer and Processing Facility has a maximum permitted throughput of 4,125 tons per day (CalRecycle 2022a, 2022b, 2022c).

Non-recyclable materials could be disposed of at Kiefer Landfill or L and D Landfill. Kiefer Landfill is classified as a Class III municipal solid waste landfill facility and is permitted to accept general residential, commercial, and industrial refuse for disposal, including municipal solid waste, construction and demolition debris, asbestos, green materials, and other nonhazardous designated debris (CalRecycle 2022d). L and D Landfill is classified as a Class II and III landfill that is permitted to accept municipal solid waste, construction and demolition debris, green materials, clean and dirty concrete, clean soil, appliances, and electronic waste (L and D Landfill 2022).

Table SI-4 shows the maximum capacity, remaining capacity, and closure date of the Kiefer Landfill and L and D Landfill. Combined, these landfills have a large volume of landfill capacity (116 million cubic yards) available to serve the proposed project. The closure dates of the Kiefer Landfill and L and D Landfill are anticipated to be approximately January 1, 2064 and December 31, 2030, respectively.

Table SI-4. Primary Landfills

Facility (County)	Location	Capacity
Kiefer Landfill (Sacramento County)	12701 Kiefer Boulevard Sloughhouse, CA 95683	Maximum permitted capacity: 117.4 million cubic yards Remaining capacity: 112.9 million cubic yards Closure date: January 1, 2064
L and D Landfill (Sacramento County)	8635 Fruitridge Road Sacramento, CA 95826	Maximum permitted capacity: 20.5 million cubic yards Remaining capacity: 3.1 million cubic yards Closure date: December 31, 2030

Sources: CalRecycle 2022c, 2022d

The proposed project would comply with all applicable federal, State, and local solid waste statues and regulations, including compliance with the CALGreen Code and the County's Construction and Demolition Debris program. The Kiefer Landfill and L and D Landfill have sufficient landfill capacity available to accommodate the solid-waste disposal of the proposed project. Therefore, impacts related to sufficient landfill capacity would be **less than significant**.

5. Comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

   As discussed above under Item 4, the proposed project would comply with all applicable solid waste statutes and regulations, including CALGreen and Article 6

(Construction and Demolition Debris) of Chapter 6.20, Title 6, of the Sacramento County Code. **No impact** would occur.

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. A Water Supply Assessment was prepared for Alternative 1. According to the Water Supply Assessment that was prepared, the proposed solar facilities for Alternative 1 would require a total of 259 AF of groundwater over the projected 35-year Alternative 1 life. Averaged over the 35-year Alternative 1 life, the proposed Alternative 1 solar facilities would require approximately 7.4 AFY of groundwater. This is less than the projections for the proposed project, which would be approximately 38.5 AFY (Dudek 2022). Similar to the proposed project, Alternative 1 would be operated remotely, with no dedicated on-site staff and would not include the construction of permanent restrooms.

Alternative 1 would have a balanced volume of cut and fill material during site grading and no import or export of grading material would be required, so there would be less solid waste disposal required compared to the proposed project. Alternative 1 would be subject to the same policies, regulations, and recommendations as the proposed project. Similar to the proposed project, Alternative 1 would comply with all applicable federal, State, and local solid waste statues and regulations, including compliance with the CALGreen Code and the County's Construction and Demolition Debris program. For the reasons described above for the proposed project, the impacts listed in this section related to utilities and service systems would also be **less than significant** for Alternative 1.

CUMULATIVE IMPACTS AND ANALYSIS

INTRODUCTION AND LIST OF CUMULATIVE PROJECTS

The CEQA Guidelines Section 15355 defines a cumulative impact as "two or more individual effects which, when considered together, are considerable." An individual effect need not itself be significant to result in significant cumulative effects; the impact is the result of the incremental effects of the project combined with the effects of "other closely related past, present, and reasonably foreseeable probable future projects."

The requirements for a cumulative analysis are described in CEQA Guidelines Section 15130. A cumulative analysis "need not provide as great detail as is provided for the effects attributable to the project alone." The analysis should focus on analyzing the effects of the project to which other projects contribute, to the extent practical and reasonable. These other projects may be identified either through the provision of a list of cumulative projects, or via a summary of projections contained in an adopted General Plan or an adopted EIR. The proposed project area is rural in nature and located outside the Urban Services Boundary of the General Plan where future development is focused. As a result, this EIR uses the list approach to analyze the potential cumulative impacts of other reasonably foreseeable projects and the contribution to such impacts from the proposed project. The significance criteria used for this analysis are the same as those used throughout the topical chapters of this document.

The cumulative projects in the region surrounding the project site that are considered in the cumulative analysis are listed in Table SI-5 below.

Table SI-5. Cumulative Projects List

Project No.	Project Name (County Control Number)	Location	Description	Status
Unincorporated Sacramento County				
1	OE3 Training Center (PLNP2017-00199)	13800 Meiss Road	Construction of a campus and associated facilities and field instruction to provide worker training on the use of construction equipment within a 450-acre site	Approved
2	Coyote Creek Agri-voltaic Ranch (PLNP2021-00191)	3830 Scott Road, Sloughhouse, CA	Development of a 200-megawatt photovoltaic solar energy generation facility on parcels that total 2,555 acres	In Planning Process
3	Cordova Hills (PLNP2008-00142)	4715 Grant Line Road, Rancho Cordova, CA 95742	2,669 acres east and adjacent to Rancho Cordova	Under Construction
4	Riverview Subdivision Map Extension / Rancho Murieta (2004-00168 and PLNP2017-00182)	14834 Reynosa Drive, Rancho Murieta, CA 95683	Develop 57 acres into 140 residences, a park site, open space, resource protection, landscaping, wetlands restoration and sediment basin	Under Construction
5	Carli Mine Expansion (PLNP2017-00243)	11501 Florin Road	A 160-acre expansion of an existing surface mine of 394 acres	Operational
6	Grant Line East Mine Use Permit Amendment (PLNP2021-00135 and 95-0658)	3500 Grant Line Road, Rancho Cordova, CA 95742	Extend existing aggregate mining operations through July 2046. No new or expanded activities are proposed	In Planning Process
7	Rancho Murieta North (PLNP2014-00206)	Eastern Sacramento County along the Jackson Road highway	772 acres located in the Rancho Murieta community	In Planning Process
8	NewBridge Specific Plan (PLNP2010-00081)	Eastern Sacramento County along the Jackson Road highway	1,095 acres south of the Mather South Plan area, along Kiefer Boulevard	Approved
9	Jackson Township Specific Plan (PLNP2011-00095)	Eastern Sacramento County along the Jackson Road highway	1,391 acres south of Mather Field, west of the Mather South Plan Area	Approved
10	Mather South Community Master Plan (PLNP2013-00065)	Eastern Sacramento County along the Jackson Road highway	848 acres on a portion of former Mather Air Force Base, immediately south of the city of Rancho Cordova	Approved
City of Rancho Cordova				
11	Sunridge Ranch Specific Plan	Located in southern Rancho Cordova	2,606 acres south of Douglas Road, east of Sunrise Boulevard, and north of Grantline Road	Approved

CUMULATIVE IMPACT ANALYSIS METHODOLOGY

Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. CEQA Guidelines Section 15130(a)(3) states that an EIR may determine that a project's contribution to a significant cumulative impact would be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution would be rendered less than cumulatively considerable.

For purposes of this EIR, the project would have a significant cumulative effect if it meets either one of the following criteria:

- The cumulative effects of related projects (past, current, and probable future projects) without the project are not significant but the project's incremental impact is substantial enough, when added to the cumulative effects, to result in a significant impact; or
- The cumulative effects of related projects (past, current, and probable future projects) without the project are already significant and the project represents a considerable contribution to the already significant effect. The standards used herein to determine "considerable contribution" are that the impact either must be substantial or must exceed an established threshold of significance.

The analysis herein evaluates whether, after adoption of project-specific mitigation, the residual impacts of the project would cause a cumulatively significant impact or would contribute considerably to existing/anticipated (without the project) cumulatively significant effects.

CUMULATIVE IMPACT ANALYSIS

AESTHETICS

PROPOSED PROJECT

In order for a cumulatively significant impact related to degradation of visual character or quality to occur, one or more of the related projects considered in this cumulative analysis would have to be located within the viewshed of the proposed project site. None of the projects considered in this cumulative analysis are within the viewshed of the project site. Thus, there would be **no cumulative impact** related to degradation of visual character or quality.

Light spillover can result in nighttime glare effects, and also contributes to a decrease in views of the night sky. Nighttime lighting in the project vicinity is limited, emanating solely from a few scattered rural residences and from motor vehicle headlights on Dillard Road and Meiss Road. New nighttime lighting associated with some of the related projects

considered in this cumulative analysis, particularly the development projects that include residential and commercial land uses, would contribute to a regional decrease in the ability to view the night sky (skyglow effects), and the potential for increased glare from nighttime lighting. Therefore, the related projects would result in a significant impact from new sources of nighttime lighting. The project's operational phase would require only minor nighttime security lighting at the substation, office, and battery storage buildings, none of which would be located in proximity to existing off-site residences. Nighttime operational lighting at the project site would be motion-activated, shielded, and oriented to focus illumination on the desired areas, thereby minimizing light spillover and eliminating glare for motorists traveling on Dillard Road and nearby residents. Therefore, the project's operational nighttime lighting would result in a **less-than-cumulatively-considerable contribution** to the cumulatively significant impact from new sources of substantial glare or skyglow.

Nighttime lighting is frequently necessary during construction of larger projects, and may be necessary for one or more of the related projects considered in this cumulative analysis. If nighttime construction lighting is present in close proximity to residences, sleep disturbance can occur. However, for a cumulative impact to occur, nighttime lighting adjacent to residences would have to be present either at the same time or in the same locations at the proposed project. As noted above, none of the projects considered in this cumulative analysis are within the viewshed of the project site, and therefore the residents within 500 feet of Meiss Road and Dillard Road, or the two residences at 12500 and 12501 Simpson Ranch Court would not experience the potential for sleep disruption from nighttime lighting from any of the related projects. Thus, there would be **no cumulative impact** related to disturbance from nighttime construction lighting.

Large arrays of PV panels have the potential to result in substantial daytime glare from reflected sunlight, which can cause visual discomfort or retinal damage for nearby viewers and interfere with aircraft operations (depending on the direction of flight in relationship to PV panel orientation). The Coyote Creek Agri-voltaic Ranch proposes to include approximately 2,000 acres of PV panels. Therefore, this related project could result in significant impacts from PV panel glare for aircraft en route to Mather Airport and for nearby viewers on the ground (i.e., recreationists at the adjacent Prairie City OHV Park). The proposed project includes approximately 380 acres of PV panels and supporting infrastructure. A glare analysis performed by Dudek (2020a) found that the proposed PV arrays at the project site would not result in hazardous glare at any of the modeled receptors, which included residences, roadways, and aircraft flights from Mather and Rancho Murieta Airports. Based on the results of the Dudek (2020a) glare analysis and given that the Coyote Creek Agri-voltaic Ranch project site is approximately 7.6 miles north of the project site, the proposed project would result in a **less-than-cumulatively-considerable contribution** to cumulatively significant impacts from glare caused by PV panels.

Alternative 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-

generating facility. The same environmental setting, including key observation points and viewsheds, and the same regulatory setting described in Chapter 3, “Aesthetics”, apply to Alternative 1. The same mitigation measures, policies, and recommendations that apply to the proposed project would apply. The cumulative impacts discussed above for the proposed project related to aesthetics would be the same (or slightly reduced) for Alternative 1.

Agricultural Resources and Land Use

Proposed Project

The proposed project would not conflict with, and no impact would occur to the following agricultural resources and land use topics: existing zoning for agricultural use, existing Williamson Act contract, existing zoning for or cause rezoning of forest land, timberland, or zoned timberland production, result in the loss of forest land or conversion of forest land to non-forest use, or physically divide an established community. Therefore, the project would have no potential to combine with the cumulative projects listed in Table SI-5 above to result in a significant physical environmental impact related to these topics. Thus, there would be **no cumulative impact** related to these agricultural and land use topics.

As discussed in Chapter 4, “Agricultural Resources and Land Use”, the project site is surrounded by scattered rural residential, commercial development, and open space generally composed of annual grassland and agricultural fields. Sacramento General Plan Policy AG-5 states there is an impact to farmland if a project converts over 50 acres to a non-agricultural use. While the applicant proposes to maintain the site in grazing during operation of the facility, should grazing be discontinued or the site is otherwise converted to a non-agricultural use, the impacts would be potentially significant according to Sacramento County General Plan Policy AG-5. The applicant would be required to implement Mitigation Measure AL-1 (Implement the Agricultural Management Plan) and this would reduce project-related agricultural impacts because continued agricultural use would be required through the operational life of the project. Additionally, after the project is decommissioned as required by the Decommissioning Plan for the project, the site would be restored to its previous conditions and would support agricultural uses. In Sacramento County, any project that would convert over 50 acres of farmland to non-agricultural use would be required to mitigate the loss, per the Sacramento County General Plan Agricultural Element, Policy AG-5. The cumulative projects and the proposed project would be required to comply with this policy and implement mitigation measures as required by the General Plan to reduce impacts related to the conversion of agricultural land to non-agricultural use. Therefore, implementation of the related projects considered in this cumulative analysis would result in a cumulatively less-than-significant impact, and the proposed project result in a **less-than-cumulatively-considerable contribution** to impacts from conversion of agricultural land to non-agricultural use.

Commercial solar facilities occupying more than 10 acres require approval of a Use Permit by the County Board of Supervisors (Sacramento County 2021). All projects must conform with the County’s Development Code, including its zoning maps, and are

required to be generally consistent with the General Plan. Therefore, the proposed project in combination with cumulative projects would not result in a significant cumulative impact related to a conflict with a land use plan, policy, or regulations adopted for the purpose of mitigating an environmental impact. Conflicts with existing land use plans and policies are policy issues and do not, in themselves, give rise to a significant physical impact related to land use under CEQA. Therefore, implementation of the related projects considered in this cumulative analysis would result in a cumulatively less-than-significant impact, and the proposed project result in a **less-than-cumulatively-considerable contribution** to any impact related to land use. To the extent that the proposed project results in physical environmental effects that could combine with those of cumulative projects, the cumulative impact on the environment is addressed under each topic section in this chapter.

Alternative 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. The same environmental setting and regulatory setting described in Chapter 4, “Agricultural Resources and Land Use”, apply to Alternative 1. The same mitigation measures, policies, and recommendations that apply to the proposed project would apply to Alternative 1. Therefore, the cumulative impacts discussed above for the proposed project related to agricultural resources and land use would be the same (or slightly reduced) for Alternative 1.

Air Quality

Proposed Project

The geographic scope for the cumulative analysis of air quality impacts is considered to be the Sacramento Valley Air Basin (SVAB). It is appropriate to consider the entire air basin because air emissions can travel substantial distances and are not confined by jurisdictional boundaries; rather, they are influenced by large-scale climatic and topographical features.

As discussed in Chapter 5, “Air Quality”, the Sacramento Metropolitan Air Quality Management District’s (SMAQMD’s) CEQA Guide contains guidance for analyzing construction and operational impacts. As described in the SMAQMD CEQA Guide, the SMAQMD approach to thresholds of significance is key to determining whether a project’s individual emissions would result in a cumulatively considerable adverse contribution to the SVAB’s existing air quality conditions (SMAQMD 2020). Sacramento County is currently in nonattainment for ozone and PM_{10} with respect to the California Ambient Air Quality Standards, and in nonattainment for ozone and $PM_{2.5}$ with respect to the National Ambient Air Quality Standards. As such, a significant cumulative adverse air quality impact already exists within Sacramento County with respect to ozone precursors (i.e., oxides of nitrogen [NO_X] and reactive organic gases [ROG]) and particulate matter (i.e., PM_{10} and $PM_{2.5}$).

As described in Chapter 5, project-related construction emissions of NO_X and PM_{10} would exceed the applicable construction mass emission thresholds established by SMAQMD. Mitigation Measures AQ-2a (Implement Basic Construction Emission Control Practices (Best Management Practices) and Enhanced Fugitive PM Dust Control Practices during Construction and Decommissioning), AQ-2b (Reduce Construction Equipment Exhaust-Related Emissions during Construction), AQ-2c (Reduce Haul Truck Trip Exhaust-Related Emissions during Construction), AQ-2d (Submit a Construction Emissions Control Plan), and AQ-2e (Off-site Construction Mitigation) would reduce construction-related emission and would ensure additional off-site mitigation through participation in the SMAQMD's off-site mitigation fee program in the case that emissions would still exceed the SMAQMD thresholds. Therefore, with implementation of Mitigation Measures AQ-2a through AQ-2e, construction-related emissions would be reduced to a level below the thresholds of significance and the proposed project would not be considered cumulatively considerable.

Operation of the proposed project would result in minor emissions of ozone precursors that would not exceed the SMAQMD thresholds of significance. Therefore, the proposed project would not be considered cumulatively considerable with respect to operational emissions of ozone precursors. As described in Chapter 5, operation of the proposed project would generate PM emissions; therefore, implementation of Mitigation Measure AQ-2f (Implement Best Management Practices for Reducing Operational PM Emissions) would be required in order to use the SMAQMD non-zero thresholds of significance. With implementation of Mitigation Measure AQ-2f, the proposed project's operational PM emissions would not exceed the applicable PM project-level thresholds.

Furthermore, the proposed project consists of a renewable energy facility that would contribute to the use of renewable energy resources in the state and would, over the operational lifetime of the proposed project, reduce criteria air pollutants from electricity generation in the state and in SVAB. Therefore, with mitigation the proposed project would have a **less-than-cumulatively-considerable contribution** to the significant cumulative impact associated with regional air quality.

Alternative 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. Under Alternative 1, no additional truck trips would be generated to haul off excess grading material because Alternative 1 would have a balanced volume of cut and fill material during site grading, so there would be no import or export of grading material required. This would result in fewer construction emissions compared to the proposed project. The same environmental setting and regulatory setting described in Chapter 5, "Air Quality", apply to Alternative 1. The same mitigation measures, policies, and recommendations that apply to the proposed project would apply to Alternative 1. Therefore, the cumulative impacts discussed above for the proposed project related to air quality would be similar, but reduced, for Alternative 1.

Biological Resources

Proposed Project

This cumulative impact analysis evaluates the contribution of the project to the collective impact on the environment from implementation of the project combined with other related past, present, and reasonably foreseeable projects that could affect similar biological resources. The SSHCP Plan Area is used as the area of analysis for cumulative effects – it is sufficiently large to address regionwide and population-level effects to biological resources addressed in this EIR, it encompasses the project site, and has recently been evaluated for the cumulative effects of development over the 50-year lifespan of the HCP.

Project-related impacts on wetlands and thereby wetland-associated species habitat, annual grasslands and grassland-associated species habitat (e.g., Swainson's hawk, valley elderberry longhorn beetle, etc.), and special-status plants would be mitigated to no net loss and, therefore, would not contribute a cumulative impact. However, as described in detail in Impacts BR-1 through BR-6 in Chapter 6 and summarized above in "Significant Effects Which Could Be Avoided With Implementation of Mitigation Measures," the project could result in residual less-than-significant impacts (with mitigation) on special-status wildlife species individuals; therefore, this cumulative impact analysis addresses only these potential impacts.

The cumulative context for this analysis is described in the cumulative effects analyses from the recent Final Environmental Impact Statement/Environmental Impact Report South Sacramento Habitat Conservation Plan (SSHCP FEIS/EIR) (Sacramento County and USFWS 2018), which describes the effects of past and present actions within the South Sacramento County area (i.e., SSHCP Plan Area), such as from agricultural, urban development, infrastructure, mining, and land preservation (see Sections 3.7.1 and 3.7.2 in Sacramento County and USFWS 2018); and the effects of reasonably foreseeable actions including urban developments in the Elk Grove and Rancho Murrieta areas that are also included in Table SI-5, Cumulative Projects List. Additional reasonably foreseeable project developments which could contribute additional incremental impacts not addressed in the SSCHP analysis, include other solar developments and future mine projects identified in Table SI-5.

Effects of past and present projects have contributed a significant cumulative impact on special-status wildlife, as reflected by the special status (i.e., rarity) assigned to each of these species currently. The proposed project would be required to implement avoidance and minimization measures, as identified in Chapter 6, that would largely avoid the direct loss of individuals of any special-status wildlife species. Other cumulative projects would also be required to implement similar avoidance and minimization measures that would also result in avoiding the direct loss of special-status wildlife. Any residual harassment or temporary displacement of special-status wildlife to adjacent or nearby mitigation lands would be collectively minor and would not likely result in any measurable population level impact. Therefore, the incremental impacts of the proposed project on special-status wildlife when considered together with the significant impacts to these biological

resources from past and present actions in the analysis area would be considered **less than cumulatively considerable**.

Alternative 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. As discussed in Chapter 14, Alternative 1 has a refined site plan and a different configuration that would reduce the overall total impact footprint. The same environmental setting and regulatory setting described in Chapter 6, "Biological Resources", apply to Alternative 1. The same mitigation measures, permits, policies, and recommendations that apply to the proposed project would apply to Alternative 1. Therefore, the cumulative impacts discussed above for the proposed project related to biological resources would be similar, but reduced, for Alternative 1.

Climate Change

Proposed Project

The discussion of GHG emissions generated by proposed project construction in Chapter 7, "Climate Change", is inherently a cumulative impact discussion. GHG emissions from one project cannot, on their own, result in changes in climatic conditions; therefore, the emissions from one project must be considered in the context of their contribution to cumulative global emissions, which is a significant cumulative impact. Total construction-related GHG emissions are estimated to be approximately 3,490 MT CO_2e over the eight-month construction period and would exceed the SMAQMD construction-related threshold of 1,100 MT CO_2e per year. However, the proposed project's contribution as a GHG-free energy resource is also important to acknowledge as a valuable long-term benefit of the proposed project. As a GHG-free energy resource, proposed project operations would serve to increase SMUD's renewable energy supply and help reduce GHG emissions associated with SMUD's power generation. As detailed in Chapter 7, if the renewable electricity generated by the project were to be used instead of electricity generated by SMUD's current sources projected to the 2023 calendar year, the proposed project would provide a potential offset of up to 19,459 MT CO_2e in the first year of operation. Over the expected 35-year life of the project, these annual avoided emissions would vastly exceed the emissions associated with the project's short-term construction activities.

In consideration of this overall GHG reduction and because the proposed project would also implement Mitigation Measure CC-1 (Implement Construction GHG Emission Best Management Practices during Construction Activities) to reduce construction-related exhaust emissions to the maximum extent feasible, the proposed project **would not have a considerable** contribution to the significant cumulative impact of global climate change. In addition, the project **would not result in a new cumulatively significant impact** related to GHG emissions.

Alternative 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. Under Alternative 1, no additional truck trips would be generated to haul off excess grading material because Alternative 1 would have a balanced volume of cut and fill material during site grading, so there would be no import or export of grading material required. This would result in fewer construction emissions compared to the proposed project. The same environmental setting and regulatory setting described in Chapter 7, “Climate Change”, apply to Alternative 1. The same mitigation measures, policies, and recommendations that apply to the proposed project would apply to Alternative 1. Therefore, the cumulative impacts discussed above for the proposed project related to climate change would be similar, but reduced, for Alternative 1.

Cultural and Paleontological Resources

Proposed Project

Cumulative development in Sacramento County could significantly impact historical and archaeological resources. The archaeology of the archaeological and historical resources in their original contexts is crucial in developing an understanding of the past social, economic, and technological character of cultural resources. Based on past, present, and future development in Sacramento County, the loss of archaeological and historical resources is considered a significant cumulative impact.

The boundaries of a site or resource with historical or archaeological value could extend beyond project boundaries. As a result, a meaningful approach to preserving and managing cultural information should focus on the likely distribution of cultural resources, rather than on project or parcel boundaries. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains. However, proper planning and appropriate mitigation can help to capture and preserve the knowledge of such resources and can provide opportunities for increasing understanding of past environmental conditions, cultures, historical land use or other information not found in the historic record, by recording data about significant cultural resources discovered and preserving artifacts found. Based on the finding of the records search, literature search, Native American outreach, and field survey, implementation of Mitigation Measures CR-1 (Worker Awareness Environmental Program [WEAP] and Archaeological Monitoring) and CR-2 (Cultural Resources and Unanticipated Discoveries) would be required. These mitigation measures would ensure that the project applicant documents and preserves cultural resources that have been identified or may be encountered during construction of this project. Other cumulative projects would be required to implement similar measures to document and protect unanticipated discovery of cultural resources. These mitigation measures limit the cumulative contribution of impacts to cultural resources within Sacramento County and with mitigation, the project would have a **less-than-cumulatively-considerable contribution** to the cumulative impact associated with the regional loss of archaeological and historical resources.

Fossil discoveries resulting from excavation and earth-moving activities associated with development are occurring with increasing frequency throughout the state. The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions (such as for a research project). Unique, scientifically-important fossil discoveries are relatively rare, and the likelihood of encountering them is site-specific and is based on the specific geologic rock formations that are present at any given project site. These geologic formations vary from location to location.

Sacramento County includes a variety of rock formations such as the Pleistocene-age Riverbank Formations and the Pliocene–Miocene age Mehrten Formation. Due to the large number of vertebrate fossils and plant fossil assemblages that have recovered from these rock formations, they are considered to be of high paleontological sensitivity. Therefore, earthmoving activities associated with the projects considered in this cumulative analysis could damage or destroy unique paleontological resources that may be present in these rock formations, and potentially within other paleontologically sensitive formations as well. Therefore, the proposed project, in combination with the cumulative projects listed above in Table SI-5 could result in a significant cumulative impact. Construction of the proposed project would also result in earthmoving activities in the paleontologically sensitive Riverbank and Mehrten Formations. Implementation of Mitigation Measure CR-3 (Avoid Impacts to Unique Paleontological Resources) requires education of construction workers about fossils prior to the start of earthmoving activities, and halting construction activities if fossil evidence is encountered and consulting with a qualified paleontologist who would recommend appropriate actions including fossil recovery and future on-site monitoring. Therefore, the proposed project would result in a **less-than-cumulatively-considerable contribution with mitigation** to cumulatively significant impacts from destruction of or damage to unique paleontological resources.

Alternative 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. The same environmental setting and regulatory setting described in Chapter 8, “Cultural and Paleontological Resources”, apply to Alternative 1. The same mitigation measures, policies, and recommendations that apply to the proposed project would apply to Alternative 1. Therefore, the cumulative impacts discussed above for the proposed project related to cultural and paleontological resources would be the same (or slightly reduced) for Alternative 1.

Energy

Proposed Project

Impacts related to electricity would be restricted to the SMUD service area, since they are the electricity provider for the area occupied by the proposed project. Energy impacts associated with equipment and vehicle use is generally restricted to the average travel radius of commuting workers and vehicle trips associated with equipment delivery, since

these are the areas in which energy sources would be demanded and supplied for the proposed project. The proposed project would use energy sources during construction, operation and maintenance, and decommissioning, thus, could contribute to potential cumulative impacts during any of these phases.

No existing significant adverse conditions were identified that would be worsened or intensified by the proposed project. The proposed project would increase SMUD's overall power generation capacity and portfolio of eligible renewable resources contributing to its overall power mix. When considered in the context of the proposed renewable resource power that would be generated as a result of the proposed project, the proposed project would generate much more energy than would be required to run the operations and maintenance components of the proposed operations. In short, the proposed project would serve the cumulative demand on energy resources in the area. In addition, the proposed project would also assist California utilities in meeting their obligations under State energy storage targets. **No significant adverse cumulative effect would result** relating to electricity use. The project would support state and local goals and plans for renewable energy, including those outlined in SB 1078 of 2002 and SB 100 of 2021 related to renewable energy and GHG-free energy sources, as well as SMUD's 2030 Zero Carbon Plan.

No existing significant adverse conditions related to efficiency of fuel use were identified that would be worsened or intensified by the proposed project. Past, present, and reasonably foreseeable future projects within close proximity to the proposed project site could require gasoline or diesel but would not combine with the fuel demands of the proposed project to cause a significant adverse cumulative impact relating to the wasteful, inefficient, or unnecessary consumption or use of fuel. Under these conditions, the proposed project's less-than-significant impact relating to wasteful, inefficient, or unnecessary consumption or use of fuel would **not be cumulatively considerable**.

Alternative 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. Under Alternative 1, no additional truck trips would be generated to haul off excess grading material because Alternative 1 would have a balanced volume of cut and fill material during site grading, so there would be no import or export of grading material required. The same environmental setting described above in the Energy Section for the proposed project, apply to Alternative 1. The same policies and recommendations that apply to the proposed project would apply to Alternative 1. Therefore, the cumulative impacts discussed above for the proposed project related to energy would be similar, but reduced, for Alternative 1.

Geology, Seismicity, and Soils

Proposed Project

The project site and the related projects considered in this cumulative analysis are situated along the western margin of the Sierra Nevada and/or the eastern margin of the

Sacramento Valley; these areas historically have not been seismically active. Depending on the depth to groundwater and the type and age of overlying rock formations, some of the cumulative projects could be subject to liquefaction hazards. Because the landforms at the cumulative project sites are flat to gently rolling, landslide hazards are unlikely. Both the proposed project and the related projects considered in this cumulative analysis could be exposed to moderate hazards from seismic ground shaking, as well as hazards from construction in unstable or expansive soil. Both the related projects and the proposed project would be subject to the same design and engineering requirements of the California Building Standards Code (CBC), which include an 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. The CBC also regulates the analysis of expansive soils for foundations and grading work. The requires that measures to reduce damage from seismic effects and expansive soils be incorporated in structural design. Therefore, implementation of the related projects considered in this cumulative analysis would result in a cumulatively less-than-significant impact, and the proposed project result in a **less-than-cumulatively-considerable contribution** to impacts from seismic or geologic hazards.

Implementation of the related projects considered in this cumulative analysis, and the proposed project, would result in substantial earthmoving activities that would disturb soils and could result in soil erosion, if not properly controlled. All of the cumulative projects that disturb one acre or more are required by law to prepare a SWPPP and implement site-specific BMPs that are specifically designed to prevent construction-related erosion. The cumulative projects and the proposed project would also be required to obtain a County grading permit, which requires submittal of a soils report and a geotechnical report, along with detailed grading plans for County review and approval, showing how erosion would be reduced. Permit conditions would be imposed by the County (such as straw wattles and watering of the soil surface during construction) to reduce potential erosion impacts. Therefore, implementation of the related projects considered in this cumulative analysis would result in a cumulatively less-than-significant impact, and the proposed project result in a **less-than-cumulatively-considerable contribution** to impacts from soil erosion.

Alternative 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. Therefore, the Alternative 1 site is composed of the same soils and geologic formations as the proposed project. Alternative 1 would have a balanced volume of cut and fill material during site grading, there would be no import or export of grading material required. The same environmental setting described above in the Geology, Seismicity, and Soils Section for the proposed project, apply to Alternative 1. The same permits, policies, regulations, and recommendations that apply to the proposed project would apply to Alternative 1, including but not limited to, complying with the County's Land Grading and Erosion Control Ordinance and implementing a SWPPP and BMPs in compliance with the statewide NPDES permit. Therefore, the cumulative impacts

discussed above for the proposed project related to geology, seismicity, and soils would be the same (or slightly reduced) for Alternative 1.

Hazards and Hazardous Materials

Proposed Project

All of the related projects considered in this cumulative analysis, along with the proposed project, would involve the use, temporary storage, and transport of small amounts of hazardous substances used during construction, such as fuels, lubricants, oils, and paint. All materials must be used and stored in compliance with federal, state, and local ordinances, laws, regulations and policies related to hazardous materials, including the County's requirements for handling and transport of hazardous materials. None of the substances would be acutely hazardous. The Phase I ESA prepared for the project site did not identify any recognized environmental concerns (Dudek 2020b). The proposed project and the related projects considered in this cumulative analysis would not include any usual conditions related to use, storage, or transport of minor amounts of hazardous materials such that an increased likelihood for accidental spills would occur. Furthermore, if any accidental spills were to occur or if any previously unknown hazardous materials were encountered and released into the environment during construction activities, the effects would be site-specific, and therefore the related projects considered in this cumulative analysis would not combine to form cumulatively considerable impacts. Thus, there would be **no cumulative impact**.

Two of the related projects considered in this cumulative analysis (Riverview Subdivision Map Extension and Rancho Murieta North) are located in the vicinity of the Rancho Murieta Airport. Land use compatibility for the Rancho Murieta Airport is determined by the ALUC *Airport Land Use Policy Plan* (Sacramento ALUC 1992). The other related projects considered in this cumulative analysis (except the OE3 Training Center project) are located in the vicinity of Mather Airport. Land use compatibility for Mather Airport is determined by the Sacramento ALUC's *Mather Airport Land Use Compatibility Plan* (ESA 2022). The related projects could result in cumulatively significant impacts related to aircraft safety hazards. The project site is 7.3 miles from Mather Airport and is outside the boundaries of the *Mather Airport Land Use Compatibility Plan*. Therefore, the proposed project would have **no cumulative impact** related to Mather Airport. The project site is approximately 3.5 miles southwest of the Rancho Murieta Airport, and is not within the airport's noise contours. The proposed project does not include features such as tall buildings or flashing lights that could be mistaken for airport lighting. Therefore, the proposed project would result in a **less-than-cumulatively-considerable contribution** to cumulatively significant aircraft safety hazards for Rancho Murieta Airport.

Alternative 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. Therefore, the Alternative 1 site is composed of the same soils and geologic formations as the proposed project and the Phase I ESA prepared for the proposed project would also apply to the Alternative 1 site. The same environmental

setting described above in the Hazards and Hazardous Materials Section for the proposed project, apply to Alternative 1. The same permits, policies, regulations, and recommendations that apply to the proposed project would apply to Alternative 1, including but not limited to, complying with the County's Land Grading and Erosion Control Ordinance and implementing a SWPPP and BMPs in compliance with the statewide NPDES permit. Therefore, the cumulative impacts discussed above for the proposed project related to hazards and hazardous materials would be the same (or slightly reduced) for Alternative 1.

HYDROLOGY AND WATER QUALITY

PROPOSED PROJECT

CONSTRUCTION-RELATED DEGRADATION OF WATER QUALITY OR INTERFERENCE WITH IMPLEMENTATION OF THE BASIN PLAN

Water quality in the project region is under the jurisdiction of the Central Valley RWQCB, which is charged with protecting beneficial uses of surface water and groundwater as identified in the *Sacramento and San Joaquin River Basin Plan* (Basin Plan) (Central Valley RWQCB 2019). Construction activities associated with redevelopment of the project site would create the potential for soil erosion and sedimentation of drainage systems, both within and downstream of the project site. The construction process may also result in accidental release of pollutants to surface waters including the Cosumnes River. (Because groundwater is approximately 90 feet below the ground surface underneath the project site, it is unlikely that groundwater would be contaminated by any activities at the project site.) Soil erosion and accidental spills of hazardous materials could result in downstream sedimentation and degradation of water quality. However, as discussed in detail in Chapter 9, "Hydrology and Water Quality", the project applicant is required by law to prepare and implement a SWPPP with appropriate BMPs, such as source control, revegetation, and erosion control, to maintain surface and groundwater quality conditions in adjacent receiving waters. Just as with the proposed project, the related projects considered in this cumulative analysis would also be required to adhere to applicable requirements designed to prevent water quality degradation including SWPPPs with BMPs, and grading plans and implementation of County or local city grading permit terms. Therefore, implementation of the related projects considered in this cumulative analysis would result in a cumulatively less-than-significant impact, and the proposed project would result in a **less-than-cumulatively-considerable contribution** to temporary, short-term construction-related degradation of water quality or interference with implementation of the Basin Plan.

OPERATIONAL DEGRADATION OF WATER QUALITY OR INTERFERENCE WITH IMPLEMENTATION OF THE BASIN PLAN

Redevelopment of the project site could change the long-term potential for contaminant discharges at the project site because new impervious surfaces would be created, and thus there would be a potential for the project to cause or contribute to increased long-term discharges of urban contaminants (e.g., oil and grease, fuel, trash, pesticides, fertilizers). The project site is outside the boundaries of the Sacramento Areawide NPDES

MS4 Permit; therefore, the proposed project is subject to County standards for design of drainage facilities but regulation of new drainage facilities at the project site during the project's operational phase would fall under the jurisdiction of the Central Valley RWQCB through the statewide construction general permit. That permit requires that projects be designed such that post-development runoff does not exceed pre-development runoff. Furthermore, implementation of the related projects considered in this cumulative analysis would be required to meet similar requirements, including compliance with the Sacramento Areawide NPDES MS4 Permit and stormwater pre-treatment measures contained in the Sacramento Stormwater Quality Partnership's (SSQP) *Sacramento Region Stormwater Quality Design Manual* (SSQP 2021), for those projects that are within the Sacramento Areawide NPDES MS4 Permit boundary. Some of the related projects, such as the OE3 Training Center project, would be outside of the Sacramento Areawide NPDES MS4 Permit area and therefore, as with the proposed project, would be subject to County standards for design of drainage facilities but Central Valley RWQCB regulation during operation of those facilities. Therefore, implementation of the related projects considered in this cumulative analysis would result in cumulatively less-than-significant impact, and the project would result in a **less-than-cumulatively-considerable contribution with mitigation** to cumulative impacts from operational degradation of water quality or interference with implementation of the Basin Plan.

EXCEEDANCE OF DRAINAGE SYSTEMS RESULTING IN HYDROMODIFICATION OR FLOODING

Potential changes to the hydrologic and geomorphic processes in a watershed as a result of new impervious surfaces include increased runoff volumes and dry weather flows, increased frequency and number of stormwater runoff events, increased long-term cumulative duration of flows, as well as increased peak flows. Exceedance of drainage infrastructure capacity results in hydromodification, which intensifies the erosion and sediment transport process, and often leads to changes in stream channel geometry, and streambed and streambank properties, which can result in degradation and loss of riparian habitat, and downgradient sediment deposition. In addition, operational stormwater discharges, if not properly detained, can result in on-site and/or off-site flooding. As demonstrated in the Drainage Study completed by Baker-Williams Engineering Group and approved by Sacramento County, the proposed project would be designed in accordance with the Sacramento County Improvement Standards and the 2018 Stormwater Quality Design Manual (Baker-Williams Engineering Group 2022). Based on drainage modeling completed for the proposed project, the post-project flows would have no negative effects on adjacent parcels and water quality control requirements have been met. The proposed project would not result in a net loss of storage within the 100-year floodplain. The related projects considered in this cumulative analysis would be required to meet similar requirements, including drainage design that meets the *Sacramento City/County Drainage Manual Volume 2: Hydrology Standards* (County and City of Sacramento 2006), and (for those projects that are within the Sacramento Areawide NPDES MS4 Permit boundary) the SSQP's *Sacramento Region Stormwater Quality Design Manual* (SSQP 2021). Therefore, implementation of the related projects considered in this cumulative analysis would result in a cumulatively less-than-significant impact, and the proposed project would result in a **less-than-**

cumulatively-considerable contribution to cumulative impacts associated with exceedance of stormwater drainage systems, hydromodification, and flooding.

IMPEDE OR REDIRECT FLOOD FLOWS

The placement of buildings or other structures within FEMA 100-year floodplains could impede or redirect flood flows. Approximately 58 acres of the proposed development area immediately southwest of Meiss Road is within the FEMA 100-year floodplain; this area is proposed for PV arrays and fencing. Three smaller areas of the project site to the south within the FEMA 100-year floodplain, approximately 5 acres each, would also have PV arrays and fencing. The PV arrays would be elevated above the ground surface on steel poles anchored in the soil. The Approved Drainage Study concludes that the project would fill areas within the FEMA 100-year floodplain and the applicant would mitigate for the loss of flood storage by grading to add storage within the 100-year floodplain (Baker-Williams Engineering Group 2022). According to the Drainage Study, the proposed project would result in no net loss of storage within the 100-year floodplain. Because new structures would be constructed in the FEMA 100-year floodplain, the applicant would be required to comply with the County's Floodplain Management Ordinance. Some of the related projects considered in this cumulative analysis could result in the placement of buildings or other structures within FEMA 100-year floodplains, and those facilities could impede or redirect flood flows. However, all projects where facilities would be placed within a FEMA 100-year flood zone are required to comply with the County's Floodplain Management Ordinance, which requires application for a development permit for construction in a FEMA flood zone, and approval by the floodplain administrator. The permit application must include plans showing elevations of proposed structures and the elevations of areas proposed for materials and equipment storage; the proposed elevation in relation to mean sea level, of the lowest floor of all structures; the proposed elevation in relation to mean sea level to which any structure would be floodproofed; the location, volume, and depth of proposed fill and excavation within the 100-year floodplain and floodway; and a description of the extent to which any watercourse would be altered or relocated as a result of project development. Hydraulic modeling must be performed to demonstrate that projects would not increase off-site flooding. Therefore, implementation of the related projects considered in this cumulative analysis would result in a cumulatively less-than-significant impact, and the proposed project would result in a **less-than-cumulatively-considerable contribution** to cumulative impacts associated with impeding or redirecting flood flows.

GROUNDWATER SUSTAINABILITY

The proposed project and the OE3 Training Center project considered in this cumulative analysis are located within the San Joaquin Valley Groundwater Basin, Cosumnes Subbasin. The other related projects considered in this cumulative analysis are further north, within the Sacramento Valley Groundwater Basin, South American Subbasin. This cumulative impact discussion only focuses on the Cosumnes Subbasin (where the project resides) because the groundwater subbasins are effectively separate units and the proposed project would not impact the South American Subbasin.

As required by the Sustainable Groundwater Management Act (SGMA), groundwater sustainability plans (GSPs) for both of these subbasins have been prepared and were submitted to DWR in January 2022 for approval (EKI 2021, South American Groundwater Sustainability Agencies et al. 2021). As discussed in detail in Chapter 9, "Hydrology and Water Quality", of this EIR, the Cosumnes Subbasin is not in a state of critical groundwater overdraft, but overdraft is occurring and is projected to occur in the future (based on modeling results) without subbasin management. However, the Cosumnes Subbasin GSP includes specific Projects and Management Actions (PMAs) that are proposed to achieve the subbasin's modeled sustainability goal (i.e., managing groundwater within the subbasin's sustainable yield), as required by the SGMA. With implementation of the PMAs, modeling results indicate that overdraft would not occur, and there would be a long-term increase in groundwater storage in the Cosumnes Subbasin (EKI 2021).

The OE3 Training Center project (in the Cosumnes Subbasin) includes existing on-site groundwater wells (from former mining activities) and would result in a substantial reduction in groundwater use as compared to existing conditions, which would offset the loss of approximately 25 acres of permeable surfaces from development of a new campus; furthermore a clay hardpan is present at the OE3 Training Center project site that impedes groundwater recharge (Sacramento County Department of Planning and Environmental Review 2020). Thus, the related cumulative project in the Cosumnes Subbasin (OE3 Training Center) would not result in a significant cumulative impact related to groundwater sustainability.

Project operation would result in approximately 17 acres of new impervious surfaces, which represents about 4.5 percent of the total proposed development area (380 acres), and therefore would result in only a minor reduction of groundwater recharge at the project site. Landscape irrigation would occur for the proposed on-site visual buffers, and a portion of this applied irrigation water would reach the aquifer as recharge from percolation through the soil. The proposed project would require approximately 38.5 AFY of groundwater amortized over the 35-year project life, as compared to approximately 68 AFY of groundwater used for previous agricultural operations. Therefore, implementing the proposed project would result in a reduction in groundwater use at the project site compared to historic conditions.

Because the proposed project is located in the Cosumnes Subbasin, it would not result in a cumulative contribution (no impact) to the significant cumulative groundwater impacts from most of the related projects considered in this cumulative analysis, which are located in the South American Subbasin. With regard to the Cosumnes Subbasin, considering that: (1) the Cosumnes Subbasin GSP includes land use projections from local land use plans as part of sustainability planning, (2) modeling conducted for the Cosumnes Subbasin GSP indicates that even with future increased regional development through 2040, with implementation of the PMAs included in the GSP the groundwater subbasin would not be in a condition of overdraft, and (3) both the OE3 Training Center project and the proposed project would result in a substantial reduction in groundwater use as compared to existing conditions, implementation of the related project in the Cosumnes Subbasin considered in this cumulative analysis (OE3 Training Center) would result in a

cumulatively less-than-significant impact, and the proposed project would result in a **less-than-cumulatively-considerable contribution** to cumulative impacts associated with groundwater sustainability in the Cosumnes Subbasin.

Alternative 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. A Water Supply Assessment and Preliminary Drainage Report were prepared for Alternative 1. The Alternative 1 Water Supply Assessment concluded that Alternative 1 would require approximately 7.4 AFY of groundwater (amortized over the 35-year project life) compared to 38.5 AFY calculated for the proposed project. Additionally, the Preliminary Drainage Study concluded that the design parameters would adhere to the Sacramento County Improvement Standards and the State Water Resources Control Board water quality requirements; that the post-project flows would have no negative affect to the existing drain culvert at the outlet of the existing pond; and that Alternative 1 would result in no net loss of storage within the 100-year floodplain.

The same environmental setting and regulatory setting described in Chapter 9, “Hydrology and Water Quality”, apply to Alternative 1. The same permits, policies, regulations, and recommendations that apply to the proposed project would apply to Alternative 1, including but not limited to, complying with the County’s Land Grading and Erosion Control Ordinance and implementing a SWPPP and BMPs in compliance with the statewide NPDES permit. Therefore, the cumulative impacts discussed above for the proposed project related to hydrology and water quality would be similar, but reduced, for Alternative 1.

Noise

Proposed Project

When determining whether the overall noise (and vibration) impacts from related projects would be cumulatively significant and whether the project’s incremental contribution to any significant cumulative impacts would be cumulatively considerable, it is important to note that noise and vibration are localized occurrences; as such, they decrease rapidly in magnitude as the distance from the source to the receptor increases. Therefore, only those related projects that are in the direct vicinity of the proposed project site are relevant in a cumulative context.

Implementation of the proposed project would reduce construction-related noise by implementing noise reduction measures identified in Chapter 10, “Noise”. Compliance with applicable noise regulations and mitigation from environmental documents prepared for related projects would reduce construction-related noise impacts from other projects in the immediate vicinity of the project site. Construction projects occurring simultaneously would not result in cumulative noise or vibration impacts unless sites are being developed in close proximity to one another and expose sensitive receptors to significant noise levels at the same time. Because the closest sensitive uses are approximately 50 feet of the project site boundary, and there are no other projects within 50 feet of the residences or

in close proximity of the proposed project, any other construction occurring simultaneously would not be cumulatively considerable. Therefore, a cumulatively significant impact would not occur, and the proposed project would not result in a cumulatively considerable contribution to impacts associated with short-term construction-related noise and vibration.

Adding traffic to the local roadway network would result in increase in traffic noise levels in the vicinity of the project site. Possible future development within the proposed project area could result in an increase in traffic volumes on the local roadway network and, consequently, an increase in noise levels from traffic sources along affected roadway segments. Generally, when traffic volumes increase by 100 percent, a 3-dB increase in traffic noise can be expected in the area. Existing traffic volume along Jackson Highway range from approximately 10,000 to 17,000 daily volumes between South Watt Avenue and Grant Line Road (Jackson Township Specific Plan 2019). The number of workers expected on-site during construction of the project would vary over the construction period and would likely average 150 workers per day. Deliveries of equipment and supplies to the site would also vary over the construction period but have the potential to range from 5 to 40 round trips, averaging approximately 10 daily round trips. During the approximately two months of grading activity, an additional 222 truck trips per day would be generated to haul off excess grading material, resulting in an estimated peak of 602 trips per day generated during construction (300 worker trips, 80 delivery truck trips, and 222 haul truck trips). This number of 602 trips per day would only increase existing traffic volumes by up to 1 percent. Therefore, project-related construction traffic would **not have any cumulatively considerable contribution** to any cumulative temporary transportation noise impact.

Similarly, forecasted cumulative traffic volume along Jackson Highway range from approximately 21,000 to 63,000 daily volume between South Watt Avenue and Grant Line Road (Jackson Township Specific Plan 2019). The proposed project would be operated remotely through a local solar operations and maintenance company once constructed. The estimated 4 to 10 daily trips generated during operations is not considered substantial. One to four times per year, panel washing would occur for up to two weeks. However, this activity would involve limited equipment and approximately 10 staff, and thus would fall within the existing range of daily trips and would not have the potential to substantially increase traffic volumes and impact the local or regional circulation system. Project-related traffic increase of 10 to 20 trips per day would only increase future cumulative traffic volume by less than one percent. Therefore, project-related operational traffic would **not have any cumulatively considerable contribution** to any cumulative transportation noise impact.

ALTERNATIVE 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. Under Alternative 1, no additional truck trips would be generated to haul off excess grading material because Alternative 1 would have a balanced volume of cut and fill material during site grading, so there would be no import or export of grading

material required. The same environmental setting (including location of sensitive receptors) and regulatory setting described in Chapter 10, “Noise”, apply to Alternative 1. The same mitigation measures, policies, regulations, and recommendations that apply to the proposed project would apply to Alternative 1. Therefore, the cumulative impacts discussed above for the proposed project related to noise and vibration would be similar, but reduced, for Alternative 1.

UTILITIES AND SERVICE SYSTEMS

PROPOSED PROJECT

The proposed project would not conflict with, and no impact would occur to the following utilities and service system topics: wastewater treatment capacity to serve the project demand and compliance with federal, State, and local management and reduction statutes related to solid waste. Therefore, the project would have no potential to combine with the cumulative projects listed in Table SI-5 above to result in a significant physical environmental impact related to these topics. Thus, there would be **no cumulative impact** related to these utilities and service system topics.

Future development in Sacramento County would increase demand for utilities, including wastewater and stormwater treatment and disposal, water supply, and solid waste disposal. In terms of cumulative impacts, appropriate service providers are responsible for ensuring adequate provision of utilities within their service boundaries. The following discussion analyzes the cumulative impacts on the utility service providers from implementation of the proposed project and cumulative projects in their respective service areas.

WASTEWATER AND STORMWATER

As discussed above in the “Utilities and Service System” section, the proposed project would not include the construction of restrooms and would not require or result in the relocation or construction of new or expanded wastewater collection, conveyance, or treatment facilities. Therefore, the project would have no potential to combine with the cumulative projects listed in Table SI-5 above to result in a significant physical environmental impact related to this topic. Thus, there would be **no cumulative impact** related to wastewater.

As discussed in detail in Chapter 9, “Hydrology and Water Quality”, the project applicant is required by law to prepare and implement a SWPPP with appropriate BMPs, such as source control, revegetation, and erosion control, to maintain surface and groundwater quality conditions in adjacent receiving waters. Just as with the proposed project, the related projects considered in this cumulative analysis would also be required to adhere to applicable requirements designed to prevent water quality degradation including SWPPPs with BMPs, and grading plans and implementation of County or local city grading permit terms. Therefore, implementation of the related projects considered in this cumulative analysis would result in a cumulatively less-than-significant impact, and the proposed project would result in a **less-than-cumulatively-considerable contribution** to stormwater impacts.

WATER SUPPLY

The State of California has enacted legislation that is applicable to the consideration of larger projects under CEQA. SB 610 (Chapter 643, Statutes of 2001; Section 21151.9 of the California PRC and Section 10910 et seq. of the California Water Code) requires the preparation of WSAs for large developments. A water supply assessment was prepared for the proposed project. The cumulative projects that are classified as large projects would also be required to complete a water supply assessment to determine whether the projected available water supplies would meet the proposed project's water demand.

As shown in Table SI-3, the proposed solar facilities would require a total of 1,348 AF of groundwater over the projected 35-year project life. Averaged over the 35-year project life, the proposed solar facilities would require approximately 38.5 AFY of groundwater, as compared to approximately 68 AFY of groundwater used for previous agricultural operations.

As discussed in the Utilities and Service Systems section above, all of the water for the proposed project would come from on-site groundwater, likely from the largest primary agricultural irrigation well located in the center of the project site. Modeling results indicated that the maximum groundwater drawdowns would be small, and therefore groundwater use for the proposed project would not cause a substantial decline in groundwater levels or affect groundwater supplies to meet demand of existing uses (see Appendix HWQ-1 as well as Impact HW-2, in Chapter 9, "Hydrology and Water Quality", for a detailed summary of groundwater modeling conducted by Dudek for the proposed project). Therefore, the WSA concluded that the 38.5 AFY of groundwater use for the proposed project would not substantially contribute to groundwater overdraft and would not substantially impede sustainable groundwater management of the Cosumnes Subbasin (see Chapter 9, "Hydrology and Water Quality", for a detailed discussion of groundwater sustainability and recharge in the Cosumnes Subbasin). Because the proposed project is located in the Cosumnes Subbasin, it would not result in a cumulative contribution to the significant cumulative groundwater impacts from most of the related projects considered in this cumulative analysis, which are located in the South American Subbasin. As with the proposed project, the related projects that are considered large projects in this cumulative analysis would also be required to adhere to applicable requirements designed to prevent water supply issues and would need to prepare a water supply assessment showing the availability of water supply in normal, dry, and multiple dry years. Therefore, implementation of the related projects considered in this cumulative analysis would result in a cumulatively less-than-significant impact, and the proposed project would result in a **less-than-cumulatively-considerable contribution** to water supply impacts.

SOLID WASTE

Although the cumulative development projects in combination with the proposed project would incrementally increase total waste generation from the County, it is anticipated that the increasing rate of diversion County-wide through recycling, composting, and other methods would result in a decreasing share of total waste requiring landfill disposal. Cumulative development throughout the city would be subject to the same recycling and

composting requirements, and the same construction demolition and debris ordinances that are applicable to the proposed project.

As discussed above in the "Utilities and Service Systems" section, Table SI-4 shows the maximum capacity, remaining capacity, and closure date of the Kiefer Landfill and L and D Landfill. Combined, these landfills have a large volume of landfill capacity (116 million cubic yards) available to serve the proposed project and cumulative projects. The closure dates of the Kiefer Landfill and L and D Landfill are anticipated to be approximately January 1, 2064 and December 31, 2030, respectively. Given the future long-term capacity available at these two landfills, the proposed project, in combination with cumulative projects, would have less-than significant cumulative impacts related to solid waste. Therefore, implementation of the related projects considered in this cumulative analysis would result in a cumulatively less-than-significant impact, and the proposed project would result in a **less-than-cumulatively-considerable contribution** to solid waste impacts.

Alternative 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. Alternative 1 would have a balanced volume of cut and fill material during site grading and no import or export of grading material would be required, so there would be less solid waste disposal required compared to the proposed project. The Water Supply Assessment prepared for Alternative 1 concluded that Alternative 1 would require approximately 7.4 AFY of groundwater (amortized over the 35-year project life) compared to 38.5 AFY calculated for the proposed project. The same environmental setting described above in the "Utilities and Service Systems" section for the proposed project, apply to Alternative 1. The same permits, policies, regulations, and recommendations would apply to Alternative 1. Alternative 1 would comply with all applicable federal, State, and local solid waste statues and regulations, including compliance with the CALGreen Code, the County's Construction and Demolition Debris, the County's Land Grading and Erosion Control Ordinance and implementing a SWPPP and BMPs in compliance with the statewide NPDES permit. Therefore, the cumulative impacts discussed above for the proposed project related to utilities and service systems would be similar, but reduced, for Alternative 1.

Traffic and Circulation

Proposed Project

When determining whether the overall transportation and traffic impacts from related projects would be cumulatively significant and whether the project's incremental contribution to any significant cumulative impacts would be cumulatively considerable, projects that are in the vicinity of the proposed project are relevant in a cumulative context.

As described in Chapter 11, "Traffic and Circulation", the proposed project would implement Mitigation Measure TC-1 (Prepare and Implement Traffic Control Plan), which requires that the applicant prepare and implement a traffic control plan to reduce

construction-related traffic and transportation impacts. Construction projects would result in cumulative transportation and traffic impacts if sites are being developed in close proximity to one another and occurring simultaneously and using the same roadways for construction traffic. Possible future development within the proposed project area could result in an increase in traffic volumes on the local roadway network and, consequently, an increase in traffic volumes along affected roadway segments.

Existing traffic volume along Jackson Highway range from approximately 10,000 to 17,000 daily volumes between South Watt Avenue and Grant Line Road (Jackson Township Specific Plan 2019). The number of workers expected on-site during construction of the project would vary over the construction period and would likely average 150 workers per day. Deliveries of equipment and supplies to the site would also vary over the construction period but have the potential to range from 5 to 40 round trips, averaging approximately 10 daily round trips. During the approximately two months of grading activity, an additional 222 truck trips per day would be generated to haul off excess grading material, resulting in an estimated peak of 602 trips per day generated during construction (300 worker trips, 80 delivery truck trips, and 222 haul truck trips). This number of 602 trips per day would only increase existing traffic volumes by up to one percent. Therefore, a cumulatively significant impact would not occur, and the proposed project would **not result in a cumulatively-considerable contribution** to impacts associated with short-term construction-related traffic.

For certain projects the Department of Transportation requires Local Transportation Analyses (LTA), which are traffic studies. Projects subject to an LTA would (1) generate 100 or more new a.m. or p.m. peak hour vehicle trip-ends, (2) generate 1,000 or more daily vehicle trip-ends, or (3) are likely to cause or substantially contribute to traffic congestion or safety issues. The purpose of the LTA is to ensure compliance with the multimodal policies in the General Plan; these include level of service (LOS)[4], safety, transit service, and a comprehensive, safe, convenient, and accessible bicycle and pedestrian system. The project analysis includes conditions to provide any recommended improvements necessary to comply with General Plan policies. Depending on the project, the Department of Transportation may require additional analysis of other roadway elements such as turn pocket queuing, drive-thru queuing, traffic signal warrants, traffic safety, neighborhood cut-through traffic, truck impacts, access control, and phasing analysis. The County's *Transportation Analysis Guidelines* (Sacramento County 2020) provide the requirements and guidance for preparing an LTA.

The *Transportation Analysis Guidelines* have been updated to reflect SB 743 and reflected in the CEQA Guidelines Section 15064.3. As noted in the County's guidelines, the intent of SB 743 is to bring CEQA transportation analyses into closer alignment with other statewide policies regarding greenhouse gases, complete streets, and smart growth. Using vehicle miles travelled (VMT) as a performance measure instead of LOS is

[4] Level of service (LOS) is a qualitative measure used to relate the quality of motor vehicle traffic service. LOS is used to analyze roadways and intersections by categorizing traffic flow and assigning quality levels of traffic based on performance measure like vehicle speed, density, congestion, etc.

intended to discourage suburban sprawl, reduce greenhouse gas emissions, and encourage the development of smart growth, complete streets, and multimodal transportation networks. The current County guidelines provide methodologies for transportation engineers and planners to conduct CEQA transportation analyses for land development and transportation projects in compliance with SB 743. Notably, the County guidelines include the following screening criteria for projects that are expected to result in less-than-significant VMT impacts:

- Projects generating less than 237 average daily traffic (ADT)
- Local-serving public facilities/services, including utility facilities[5]

Because VMT analysis is intended to capture the long-term impacts of a proposed project, construction activities are not typically subject to VMT analysis. As a result, no analysis of construction VMT is warranted (Sacramento County 2020, page 10). Moreover, the project's operational characteristics meet the above screening criteria as both a small project and a local-serving utility, and thus detailed CEQA transportation analysis of operational VMT is not required.

Forecasted cumulative traffic volume along Jackson Highway range from approximately 21,000 to 63,000 daily trips between South Watt Avenue and Grant Line Road (Jackson Township Specific Plan 2019). The project would be operated remotely through a local solar operations and maintenance company once constructed. The estimated 4 to 10 daily trips generated during operations is not considered substantial. One to four times per year, panel washing would occur for up to two weeks. However, this activity would involve limited equipment and approximately 10 staff, and thus would fall within the existing range of daily trips and would not have the potential to substantially increase traffic volumes and impact the local or regional circulation system. Project-related traffic increase of 10 to 20 trips per day would only increase future cumulative traffic volume by less than one percent. Therefore, the proposed project would **not result in a cumulatively-considerable contribution** to impacts associated operational traffic.

ALTERNATIVE 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. Under Alternative 1, no additional truck trips would be generated to haul off excess grading material because Alternative 1 would have a balanced volume of cut and fill material during site grading, so there would be no import or export of grading material required and fewer truck trips compared to the proposed project. The same environmental setting and regulatory setting described in Chapter 11, "Traffic and Circulation", apply to Alternative 1. The same mitigation measures, policies, regulations, and recommendations that apply to the proposed project would apply to Alternative 1.

[5] Appendix A to the County's Transportation Analysis Guidelines classify both Major Utility and Solar Energy Facility land uses as local-serving public facilities/service (LPFS), and thus meet the screening criteria to not require preparation of a VMT analysis.

Therefore, the cumulative impacts discussed above for the proposed project related to traffic and circulation would be similar, but reduced, for Alternative 1.

TRIBAL CULTURAL RESOURCES

PROPOSED PROJECT

As discussed in Chapter 12, no TCRs were identified in the project area and the project would have a less than significant impact on an unanticipated discovery of TCRs with implementation of Mitigation Measures TCR-1a through TCR-1c. These mitigation measures would require cessation of ground-disturbing activities if any suspected TCRs are discovered; immediate notification of a Native American representative; and implementation of the recommended treatment measures. In addition, Native American representatives would be invited to conduct a pre-construction inspection of the project site and subsequent monitoring of construction activities with the authority to identify resources and request work be stopped would reduce impacts to TCRs.

However, cumulative development in Sacramento County may result in cumulatively significant impacts to TCRs due to continuing disturbance of undeveloped areas which could potentially contain TCRs that extend beyond project boundaries that contain tribal value and knowledge for California Native American tribes culturally affiliated with a geographic area. Development in Sacramento County that has occurred in the past may have resulted in adverse impacts to previously unidentified TCRs; however, state and federal laws related to TCRs such as Assembly Bill 52 provide a mechanism for consultation between California Native American tribes and lead agencies to address potential impacts of development activities on known and/or unknown TCRs.

Although inadvertent discoveries and potential impacts may have the potential to affect TCRs in present and foreseeable projects in Sacramento County, compliance with federal and state laws and implementation of mitigation measures, it is anticipated that other cumulative projects would be adequately addressed and impacts to TCRs would be reduced to the extent feasible. Therefore, while historic projects may have not involved Native American tribal representatives in a way that would identify the presence of TCRs, current and future projects would include this involvement and recommended mitigation strategies to avoid or reduce potential impacts. Given the lack of any information that any TCR could be affected by the proposed project and the implementation of Mitigation Measures TCR-1a through TCR-1c, the project would result in a **less-than-cumulatively-considerable contribution** to any cumulative impact associated with TCRs in Sacramento County.

ALTERNATIVE 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. The same environmental setting and regulatory setting described in Chapter 12, “Tribal Cultural Resources”, apply to Alternative 1. The same mitigation measures, policies, and recommendations would apply to Alternative 1. Therefore, the

cumulative impacts discussed above for the proposed project related to TCRs would be the same (or slightly reduced) for Alternative 1.

WILDFIRE

PROPOSED PROJECT

As stated in Chapter 13, "Wildfire", Appendix G of the CEQA Guidelines determines wildfire impacts based on whether a proposed project would occur within or near an SRA or on lands classified as very high fire hazard severity zones. The proposed project would not be within an SRA or on lands classified as a very high fire hazard severity zone (Plates WF-1 and WF-2). However, the project site boundary is adjacent to lands east of Dillard Road that are within a SRA, and these lands are designated by CAL FIRE as Moderate Fire Hazard Severity Zones.

As discussed in the Transportation and Circulation section above, the proposed project would be required to implement Mitigation Measure TC-1 (Prepare and Implement Traffic Control Plan). This plan would limit the potential for traffic hazards to occur during construction. Measures such as flaggers and traffic cones may be required to minimize conflicts with construction vehicles and equipment to provide sufficient warning to motorists and emergency vehicles passing by the project sites. Cumulative projects with the potential to impair an adopted emergency response plan or emergency evacuation plan would also be required to notify emergency responders of the planned construction activities and would prepare a traffic control plan to limit the potential for traffic hazards to occur during construction or operations. Therefore, implementation of the related projects considered in this cumulative analysis would result in a cumulatively less-than-significant impact, and the proposed project result in a **less-than-cumulatively-considerable contribution** with respect to impairing implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan.

Both the proposed project and the related projects considered in this cumulative analysis would be required to comply with all laws, plans, policies, and regulations related to fire safety and wildfire suppression, including requirements from the California PRC Sections 4292, 4427, 4428, 4431, and 4442. Strict adherence to the applicable PRC requirements would ensure that wildfire risks are minimalized. As mentioned above, the proposed project would not be within an SRA or on lands classified as a very high fire hazard severity zone and wildfire risks during construction, operation, and decommissioning would be offset by compliance with fire safety and wildfire suppression measures identified Chapter 13, "Wildfire". Adherence to these safety measures, when considered together, would minimize the risk of increased frequency, intensity, or size of wildfires and decrease the risk of exposure of people or structures to wildfire. All of the project facilities would be installed, operated, and maintained following all applicable design, safety, and fires standards. Implementation of Mitigation Measure WF-1 (Demonstrate Compliance with requirements such as the California Fire Code, the California Building Code, and Sacramento Metro Fire Department Requirements and Standards, and Manage Vegetation On-site) would reduce the risk of wildfire damage and would be incorporated into the project design. Compliance with fire and building codes would be required during

design review for all of the cumulative projects listed above. Therefore, implementation of the related projects considered in this cumulative analysis would result in a cumulatively less-than-significant impact, and the proposed project result in a **less-than-cumulatively-considerable contribution** to impacts from wildfire hazards.

ALTERNATIVE 1

As discussed in Chapter 14, the Alternative 1 site is fully encompassed by the proposed project site and would also develop an approximately 50 MW solar photovoltaic energy-generating facility. Under Alternative 1, no additional truck trips would be generated to haul off excess grading material because Alternative 1 would have a balanced volume of cut and fill material during site grading, so there would be no import or export of grading material required and fewer truck trips compared to the proposed project. The same environmental setting and regulatory setting described in Chapter 13, “Wildfire”, apply to Alternative 1. The same mitigation measures, policies, regulations, and recommendations that apply to the proposed project would apply to Alternative 1. Therefore, the cumulative impacts discussed above for the proposed project related to wildfire would be the same (or slightly reduced) for Alternative 1.

GROWTH INDUCEMENT

An EIR must discuss the ways in which a proposed project could foster economic or population growth or the construction of additional housing in the vicinity of the project, and how that growth would, in turn, affect the surrounding environment (see CEQA Guidelines Section 15126.2[d]).

The proposed project would provide a renewable source of electricity utilizing the existing electrical distribution system facilities. No new land uses or geographic areas would be served by implementation of the proposed project that would otherwise not receive service without the project. The project is consistent with both County and SMUD goals that seek to substitute non-renewable sources of energy with renewable sources, such as the solar energy that would be provided by the proposed project. For these reasons, the additional energy provided by the project would not remove any barrier to growth.

With implementation of the project, no new housing would be developed or commercial retail activity generated that could induce growth. Moreover, the project does not propose any new transportation, water, wastewater, or other infrastructure that could induce or facilitate additional growth. The relatively limited demand for workers during construction and limited staff required for operation do not have the potential to induce demand for housing and result in unplanned growth. Finally, no change to the County’s development policies would result from project implementation. Therefore, the proposed project would not result in growth inducing impacts.

Given that Alternative 1 proposes the same use as the proposed project, but with a somewhat reduced footprint, for the same reasons as noted above, Alternative 1 would not cause any growth inducing impact.

IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA requires that EIRs assess whether a project would result in significant irreversible changes to the physical environment. The CEQA Guidelines discuss three categories of significant irreversible changes that should be considered, which are listed below.

- Changes in Land Use Which Commit Future Generations
- Irreversible Damage from Environmental Accidents
- Consumption of Nonrenewable Resources

Development of the proposed project site would alter the existing land use from agricultural use to renewable energy production. However, the proposed project has an anticipated operational period of 35 years, after which a decommissioning plan would be implemented. As a result, the project site would be restored to conditions that would be substantially similar to the existing agricultural conditions. Therefore, no irreversible change to land use would result. The proposed project would commit finite energy sources to the construction of the proposed facility. However, once operational the project would provide a substantial new source of renewable energy for a period of approximately 35 years. Finally, the limited use of hazardous materials during project construction and operation would occur in compliance with all federal, state, and local regulations governing the use, transport, and handling of such materials. As a result, no irreversible damage from accidents is anticipated as a result of project implementation.

Development of the Alternative 1 site would also alter the existing land use from agricultural use to renewable energy production, though the Alternative 1 site would be restored to conditions that are similar to existing conditions with decommissioning. Alternative 1 would require energy resources for construction and would produce renewable energy. As with the proposed project, Alternative 1 would involve the limited use of hazardous materials during project construction and operation in compliance with all federal, state, and local regulations governing the use, transport, and handling of such materials. As a result, no irreversible damage from accidents is anticipated as a result of Alternative 1 implementation.

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CHAPTER 15 SUMMARY OF IMPACTS AND THEIR DISPOSITION

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17 ACKNOWLEDGEMENTS

EIR Preparers

Joelle Inman, Principal Planner

Julie Newton, Environmental Coordinator

Alison Little, Associate Planner

EIR Consultants

AECOM
2020 L St, Suite 300
Sacramento, CA 95811

Matthew Gerken, Project Director

Jillian Betro, Project Manager

Wendy Copeland, Senior Environmental Scientist

Jenifer King, Senior Environmental Planner

Issa Mahmodi, Noise and Traffic and Circulation

Chandra Miller, Cultural Resources and Tribal Cultural Resources

Heather Miller, Cultural Resources and Tribal Cultural Resources

Paola Pena, Air Quality and Climate Change

Julie Roth, Biological Resources

Lisa Clement, GIS

Debby Jew, Document Preparation

Applicant

Sloughhouse Solar, LLC

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